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**The significance (or insignificance) of fear of failure on entrepreneurial intent in Asia:
An analysis using GEM data**

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The significance (or insignificance) of fear of failure on entrepreneurial intent in Asia: An analysis using GEM data

Key words: Entrepreneurial intent, fear of failure, Asia, GEM

Abstract

Objectives – This paper uses data from the Global Entrepreneurship Monitor (GEM) to develop a model of entrepreneurial intent (EI). EI is commonly believed to be the single most relevant predictor of entrepreneurial behavior. The aim of this paper is to investigate a range of cognitive perceptions and their respective effect on individual's intent to start a new venture. A cross-cultural comparison between Asia and Europe is used to further investigate the possible differences between potential entrepreneurs from these distinct national contexts.

Approach – The empirical analysis includes a GEM data set of 14 countries (n = 33,019) which was collected in 2012. Logistic regression is used to investigate the effect of individual's cognitive perceptions on EI. Independent variables include individual's perceived capabilities, the ability to recognize (entrepreneurial) opportunities, personal acquaintance with other entrepreneurs (network), risk perceptions as well as a range of socio-cultural perceptions. Moreover, a cross-cultural comparison of the model is conducted including seven Asian (China, Japan, Korea, Malaysia, Singapore, Taiwan and Thailand) and seven European nations (France, Germany, Ireland, Lithuania, Poland, Slovenia, and the United Kingdom).

Results – The findings support the relationship between individual's cognitive perceptions and their intent to participate in entrepreneurial activities. Individual's capability, opportunity recognition, networks and a range of socio cultural perceptions all influence EI significantly. Fear of failure was found to influence EI in Europe, but not in Asian.

Conclusion – The paper develops and empirically tests a new model of entrepreneurial intent. Interestingly, fear of failure (believed to be a strong predictor of EI in western countries) was found to have no significant effect in Asian. The paper argues that this variation in risk perception is due to the different cultural settings of Europe and Asia as well as the relatively high opportunity costs for starting a new venture in Europe. Moreover, the resistance of Asian entrepreneurs to the otherwise high rates of fear of failure is proposed as an independent variable to explain the relatively high rates of entrepreneurial activity in Asia as reported by GEM.

Implication to policy – The paper utilizes a representative sample of 33,019 individuals in 14 countries. A range of cognitive perceptions was found to significantly influence individual's intention to start new ventures. Many of these perceptions, such as individual's perceived capabilities can be influenced by government policy (e.g. education policy). The paper also suggests strategies by which Asian economies in particular can benefit from their apparent resistance to fear of failure.

Introduction

EI is commonly believed to be the single most relevant predictor of entrepreneurial behavior. Empirical researches show that becoming an entrepreneur is a risky decision since they need to cope with an uncertainty. Moreover, more risk averse persons are less likely to become entrepreneurs. However, risk perception is not an only one psychological variable influencing the decision to become an entrepreneur. Gifford (2003) claimed that risk perception differ from person to person, and risk perception connected with certain decisions is lower when people have more experience, higher capabilities or more knowledge in their self employment

field. Based on the theory of planned behavior (TPB), individual behavior is driven by behavioral intentions where behavioral intentions are a function of an individual's attitude toward the behavior, subjective norms surrounding the performance of the behavior, and individual's perceived behavioral control (Ajzen, 1991). Krueger & Carsrud (1993) applied the Theory of Planned Behavior (TPB) developed by Ajzen in 1991 to explain entrepreneurial intention. Krueger & Carsrud (1993) states that entrepreneurial intention is influenced by three perception factors; namely, personal attraction to entrepreneurial activity, Perceived subjective norms, and Perceived behavioral control or self-efficacy.

According to Reynolds et al. (2005), Global Entrepreneurship Monitor (GEM) includes some cognitive perception items which are able to be used to analyze entrepreneurial intention (EI). The purpose of this paper is to investigate the influence of perceptions toward entrepreneurial intention through a comparative study between European and Asian countries.

Literature review

Entrepreneurial Intention

The previous researches concerning with entrepreneurial intention have focused on the psychological and social factor influencing and driving people to become entrepreneurs. There have been the previous studies to show the evidences of reasons people choosing to become entrepreneurs rather than employees such as desires of freedom, self controlling, and potential affluent (Jennings & Zeithaml, 1983 cited in Fernandez et al., 2009). Intention is the precedent variable of behavior (Bagozzi et al., 1989 cited in Chuttur, 2009). In entrepreneurship field, Entrepreneurial Intention defined as the search for information that can be used to help fulfil the goal of venture creation (Krueger et al., 2000). Guerrero et. al. (2008) defined entrepreneurial intention as a state of mind that people wish to create a new firm or a new value driver inside existing organizations. Starting a new business is a process with a planning rather than impulsive decision making. Krueger et al. (2000) also stated that a person who have a potential to start a new business, or sees a good business opportunity may choose not to start his business if he lack of an entrepreneurial intention. Entrepreneurial intention is influenced by three perception factors; namely, personal attraction to entrepreneurial activity, Perceived subjective norms, and Perceived behavioral control or self-efficacy (Krueger & Carsrud, 1993).

The relationship between entrepreneurship and risk perception has received some attention from researchers who have considered the relationship between entrepreneurial decisions and risk aversion. Risk perception or fear of failure is an important variable to have a negative influence to start a new business. A reduced perception of the likelihood of failure should increase the probability that an individual will start a new business (Arenius & Minniti, 2005). Risk perception is also an important factor influencing entrepreneurial intention (Simon et al., 2000). According to Wagner (2007), there is a direct relationship between risk perception and entrepreneurial intention. Fear of failure is recognized as one of the barriers to pursue entrepreneurship (Luthje & Franke, 2003 cited in Shinnar, Giacomini, & Janssen: 2012). Weber & Milliman (1997) cited in Arenius & Minniti (2005) stated that reducing fear of failure's perception should increase the probability that an individual will start a new business.

Culture and Entrepreneurship

Previous research suggests that cultural context can shape entrepreneurial attitudes and intentions (Shinnar, Giacomini & Janssen, 2012). Culture shapes individual behavior. Thornton, Ribeiro-Soriano & Urbano (2011) cited in Shinnar, Giacomini & Janssen (2012) state that cultural factor is one of factors influencing individual's career choice to be an entrepreneur and create a new business. Liñán & Chen (2009) stated that Cross-cultural studies are needed for the effect of different cultures and values on the entrepreneurial intention to be better understood. According to Hofstede (1980), Hofstede's four dimensions of individualism

(IDV), uncertainty avoidance (UA), power distance (PD), and masculinity (MAS) are proposed to cluster Nations based on the difference of culture. Several researchers call for an examination of entrepreneurial intentions across different nations and cultures.

In this study, the authors develops the conceptual framework and research questions as followed; (1) whether a range of cognitive perceptions and their respective effect on individual’s intent to start a new venture differ in Asian and European countries. The predictors or independent variables in this study are individual’s cognitive perceptions; whereas, entrepreneurial intention is criterion variable or dependent variable. The conceptual framework is showed as the figure 1.

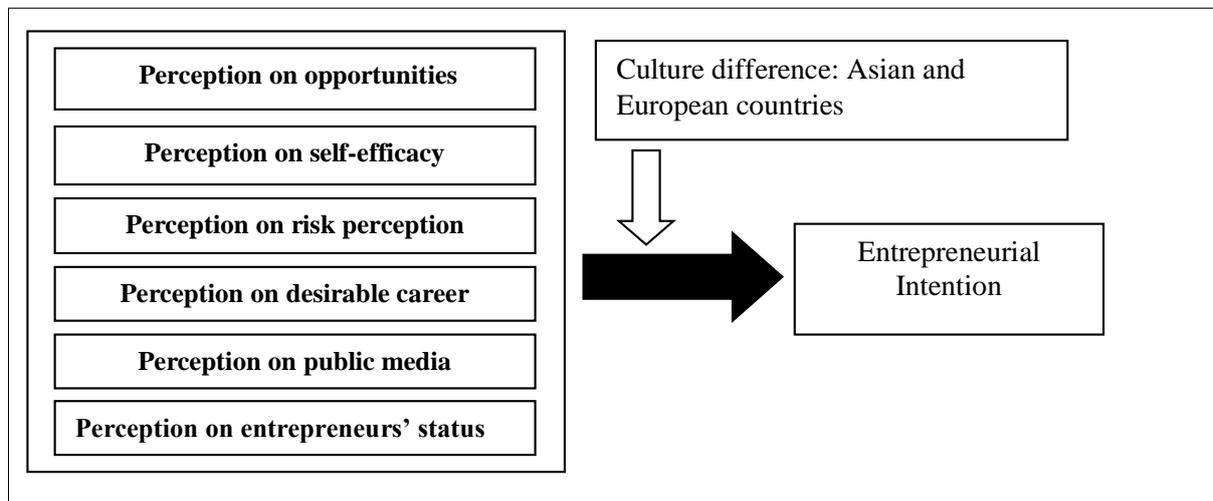


Figure 1: The conceptual framework of this study

Model development

This study tries to identify significant variables that assist estimate the probability of an individual expressing intention to start a business within three years (entrepreneurial intention). The specific variables used to measure concepts developed in the theory section are the following

Dependent variable: Entrepreneurial intention

In GEM questionnaire in Adult Population Survey (APS) section, the question “Whether they intend to start a business within 3 years? (0=No, 1=Yes)” is used to represent the entrepreneurial intention construct in the conceptual framework model.

Independent variables

Perception on opportunities in doing new business

The question “Would be good opportunities to start a firm in the area where you live in the six months? (0=No, 1=Yes)” is used to measure the perception on opportunities construct in the conceptual framework model.

Perception on self efficacy (Independent variable)

The question “Do you believe you have the required skill and knowledge to start a business? (0=No, 1=Yes)” is used to measure the perception on self efficacy construct in the conceptual framework model.

Perception on fear of failure

The question “Whether fear of failure would prevent you from setting up a business or not? (0=No, 1=Yes)” is used to measure the perception on fear of failure construct in the conceptual framework model.

Entrepreneurial network

The question “Whether you personally knew someone who had started a business in the last two years? (0=No, 1=Yes)” is used to measure the entrepreneurial network construct in the conceptual framework model.

Control variables

Age and Gender are two control variables in order to clarify the relationship between entrepreneurial intention and a range of cognitive perceptions

The binary logistic regression model is a logistic regression that applies to dichotomous. Binary logistic regression is used to predict and model binary problems in many fields. The reason logistic regression is preferred by many researchers is that it allows one to see the effect every variable has on the model in contrast to black boxed models such as neural networks. The binary logistic regression model estimates the probability that an individual belongs to a certain group (dependent=1), or not (independent=0). It also identifies the most important variables explaining the differences among both groups. Additionally, the models do not make assumptions about the statistical distribution of the variables (Greene, 2003). In this empirical study, therefore, the use of the binary logistic regression model would be reasonable on three conditions; namely, the dependent variable is dichotomous, the independent variables are also dichotomous, and the effect of a certain level of the independent variables on the probability that the studied event is present can be measured.

Research Methodology

The sample used for this study has been obtained from the Global Entrepreneurship Monitor database. According to Reynolds et al. (2005), GEM questionnaires consist of some cognitive items that may allow analyzing entrepreneurial intentions. In Thailand, School of Entrepreneurship and Management (BUSEM), Bangkok University is the only exclusive member of The Global Entrepreneurship Monitor (GEM) since 2011.

The paper utilizes a representative sample of 33,019 individuals in 14 countries including seven Asian (China, Japan, Korea, Malaysia, Singapore, Taiwan and Thailand) and seven European nations (France, Germany, Ireland, Lithuania, Poland, Slovenia, and the United Kingdom) which was collected in 2012.

Results

Entrepreneurial intention is measured by the question of intention to start a business within 3 years (dichotomous variable: Yes/No) and the sample distribution by region can be illustrated in table 1.

Table 1: Sample Distribution by Region

	Entrepreneurial intent		
	NO	YES	TOTAL
Europe	13,753	1,944	15,697
Asia	13,346	3,164	16,510
Total	27,099	5,108	32,207

Q3A. Are you, alone or with others, expecting to start a new business, including any type of self-employment, within the next three years?

For testing the influence of a range of cognitive perceptions and their respective effect on individual's intent to start a new venture, we firstly examine a multicollinearity problem. The Variance Inflation Factor (VIF) is used to measure the impact of collinearity among the variables in a logistic regression model. According to Allison (1999), the value of VIF less than 2.5 is regarded as indicating no collinearity in the model. The VIF of the variables range from 1.019 to 1.115 which less than 2.5. Therefore, there is no multicollinearity problem, and the data is suitable for further analysis.

The table 2 represents the series of the Binary logistic regression analysis in both European and Asia countries. Starting by includes only control variables in Model 1, the Model 2 includes three more variables namely, opportunity recognition, Entrepreneurs' capabilities, and entrepreneurial network. The model 3 adds up the risk perception. And, the model 4 contains three more variables; namely, desirable career, public media and respect.

Table 2: Logistic Regression on Entrepreneurial Intent

	Model 1		Model 2		Model 3		Model 4	
	B	EXP(B)	B	EXP(B)	B	EXP(B)	B	EXP(B)
Constant	.304***	1.355	-.716***	.488	-.678***	.507	1.017***	.362
Gender	-.379***	.685	-.231***	.794	-.225***	.798	-.232***	.793
Age	-.033***	.968	-.034***	.966	-.034***	.966	-.033***	.968
Opportunity Recognition			.587***	1.798	.581***	1.788	.535***	1.707
Capabilities			.932***	2.539	.923***	2.516	.916***	2.498
Network			.498***	1.645	.496***	1.642	.481***	1.618
Risk Perception					-.093*	.911	-.099**	.906
Desirable Career							.390***	1.476
Public Media							.271***	1.312
Status							-.132**	.876

Significance levels based on Wald statistics: *** significant level p less than 0.001; ** significant level p less than 0.01; * significant level p less than 0.05

As table 3, the Nagelkerke pseudo R squared indicate that how well the dependent variable can be explained by independent variables in the model. Nagelkerke pseudo R squared continually improves when the variables more add up to the beginning model, and the percentage of correct prediction ranges from 82.3 to 82.5 which are satisfied.

Table 3: Goodness-of-fit statistics

	Model 1	Model 2	Model 3	Model 4
Omnibus Tests of Model Coefficients (Significance level)	0.000	0.000	0.000	0.000
Cox and Snell pseudo R-squared	0.032	0.094	0.095	0.101
Nagelkerke pseudo R squared	0.053	0.156	0.156	0.167
Percentage correct	82.4	82.3	82.2	82.2

* A cut-off value of 0.05

Model 1 is the basic model including control variables (Gender and Age). The result shows that age and gender significantly contribute to explaining the entrepreneurial intention of respondents. According to the odd-ratios, females are 31.5% less likely as males to show the entrepreneurial intention. Moreover, Age is associated with lower entrepreneurial intentions, since every additional year of age of respondents is associated with decreasing probability to show entrepreneurial intention.

Model 2 includes three cognitive perception variable; namely, opportunity recognition, perceived capabilities, and entrepreneurial network. Moreover, model 3 additionally includes fear of failure variable into the model. Opportunity recognition, capabilities and entrepreneurial network are significantly associated with higher entrepreneurial intentions with odd ratio 1.798, 2.539, and 1.645 respectively. On the one hand, people who have fear of failure doing business are 8.9% less likely to have an intention to become entrepreneurs.

Finally, three socio-cultural perceptions variables are added to the Model 4. The result represents that those desirable career, public media, and good status are significantly affect entrepreneurial intentions.

Table 4: Regional Logistic Regression on Entrepreneurial Intent

	Europe		Asia	
	B	EXP(B)	B	EXP(B)
Constant	-.313*	.732	-1.609***	.200
Gender	-.284***	.753	-.177***	.837
Age	-.051***	.951	-.019***	.982
Opportunity Recognition	.553***	1.738	.563***	1.755
Capabilities	1.142***	3.133	.840***	2.317
Network	.561***	1.752	.387***	1.472
Risk Perception	-.292***	.746	-.010	.990
Desirable Career	.296***	1.345	.421***	1.523
Public Media	.008	1.008	.350***	1.419
Status	-.191*	.826	-.075	.928

Significance levels based on Wald statistics: *** significant level p less than 0.001; ** significant level p less than 0.01; * significant level p less than 0.05

Table 5: Goodness-of-fit statistics

	Europe	Asia
Omnibus Tests of Model Coefficients (Significance level)	0.000	0.000
Cox and Snell pseudo R-squared	0.124	0.091
Nagelkerke pseudo R squared	0.221	0.143
Percentage correct	79.6	85.6

*A cut-off value of 0.05

The logistic regression was performed to test for the existence of significant differences between European and Asian countries. Overall, results are satisfactory. The model is significant, according to the Omnibus test and the predicted correct percentages are 79.6% in European and 85.6% in Asian respectively (in table 5). According to the results of logistic regression, risk perception significantly affects on entrepreneurial intention only European countries but not significant in Asian countries. For the socio-cultural perceptions, we found that public media is a significant factor for only European countries. And, entrepreneurial status is a significant factor for only Asian countries.

Conclusion

The findings support the relationship between individual's cognitive perceptions and their intent to participate in entrepreneurial activities. Individual's capability, opportunity recognition, networks and a range of socio cultural perceptions all influence EI significantly. Fear of failure was found to influence EI in Europe, but not in Asian.

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Entrepreneurship Development for Community Enhancement in Malaysia and Indonesia

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Entrepreneurship Development for Community Enhancement in Malaysia and Indonesia

Abstract:

Entrepreneurship development promotes to develop entrepreneurial culture and effective institutional support system to entrepreneurs. National University of Malaysia (UKM) is working for community benefits and well-beings through entrepreneurship development in Malaysia and Indonesia with the collaboration of Youth Economic Participation Initiative (YEPI). The UKM-YEPI team is selecting two areas- Lampung in Indonesia and Jelawang in Malaysia for entrepreneurs' development and homestay development respectively. The study analyzes the impact of entrepreneurship development initiatives for community enhancement through stakeholders' consultations. Homestay Jelawang fail to attract huge guests due to lack of facilities in accommodations, lower service quality, operational inefficiency, lack of training and entrepreneurship, shortage of capital and lack of advertising and promotion. Moreover, the local entrepreneurs' have lack of entrepreneurship knowledge to manage and operate their business successfully in Lampung. There are several initiatives; makeover accommodations, identified products and services, suitable packages, proper pricing, effective promotion, increase communication skills and professional training are recommended to develop homestay at Jelawang for community benefits. The UKM-YEPI team facilitates the stakeholders' participation techniques including training for trainers workshop, attachment of staffs and students from universities, coaching, monitoring and evaluation for community enhancement. The team is implementing innovative social business approach by facilitating the entrepreneurs and improves the businesses of local communities at Lampung and Jelawang.

Key-words: Development, Entrepreneurship, Jelawang, Lampung, YEPI.

Introduction:

Entrepreneurship development is a process of supporting and encouraging people to become entrepreneurs aimed to create a favorable and supportive entrepreneurial environment within creativity, diversity, tolerance and on-going innovativeness. This initiative promotes to develop entrepreneurial culture and an efficient and effective institutional support system to entrepreneurs. Entrepreneurship development is enhancing the quality of entrepreneurial environment with favorable and supportive way in number of entrepreneurs' base on their growth and development (Toma, 2014).

Entrepreneurship development is widely regarded as instrumental for economic growth, for balanced regional development and for the enhancement of communities. Most of developing countries addressed their consideration to include entrepreneurship as an agenda to help the communities to increase their living standard. It has been well documented to have an economic and social implication for the communities to increase income. Entrepreneurship development can ensure community enhancement to change their economic, social, cultural and environmental situations (Bhatti, 2010). This initiative can develop networks between academicians, researchers and communities who contribute a combination of both specific technical and business systems expertise. These networks have direct relationships between stakeholders and develop considerable knowledge as well as creativity for the entrepreneurs. Connecting all of these roles and expertise is necessary in order to effectively support the flow of knowledge within the network. Those involved in knowledge transfer processes require a highly competent understanding of not only the technical issues, but also the social processes involving multiple network stakeholders. Coulson- Thomas (2003) suggested for 'knowledge entrepreneur' to acquire, develop, and extend information and knowledge into understanding

of entrepreneurship and use it effectively. The knowledge entrepreneur is skilled in the ability to communicate complex knowledge, can identify 'best practice' uses of new knowledge as well as collaborative ways of working and learning that create and enhance value for others.

Universiti Kebangsaan Malaysia or National University of Malaysia (UKM) is working for community benefits and well-beings through entrepreneurship development in Malaysia and Indonesia with the collaboration of Youth Economic Participation Initiative (YEPI), an international research grant funded by Tufts University. The UKM-YEPI team is selecting two areas- Lampung in Indonesia and Jelawang in Malaysia as study sites. Kampung Jelawang is one of the famous and attractive rural tourism destination in Kelantan. Jelawang is one of the officially registered villages of Kelantan state in Malaysia for homestay accommodations. Local people life styles, cultural heritage, traditional food and local musical performances attract the guests of homestay accommodations in this village. This area's biodiversity, water catchments, nature and environment are suitable elements to attract the tourists. Gunung Stong State Park is situated in Jelawang which is ranked five among the top 10 ecotourism destination in Malaysia. Lampung is one of the province of Indonesia, located on the southern tip of the island Sumatra. Most of the people of this area are involving in agriculture, traditional cottage and small business for their livelihood. The present study analyzes the impact of entrepreneurship development initiatives on the stakeholders' for community enhancement in Malaysia and Indonesia.

Conceptual Framework:

In Indonesia, two educational institutes- UKM and IBI Darmajaya, a private institute of higher learning in Lampung are participating for entrepreneurship development. The stakeholders of this initiative are lecturers, students and supporting staffs of educational institutes and small and medium enterprise (SME) entrepreneurs from local communities in Lampung. In this knowledge transfer program, UKM has played role as center of excellence. A total of 6 lecturers and 4 supporting staffs from UKM have engaged in entrepreneurship knowledge transfer activities to the lecturers and students of IBI Darmajaya. A total of 26 lecturers and 33 students of IBI have facilitated through the program. The program benefited 5 entrepreneurs form local communities to operate their SMEs (Figure-1).

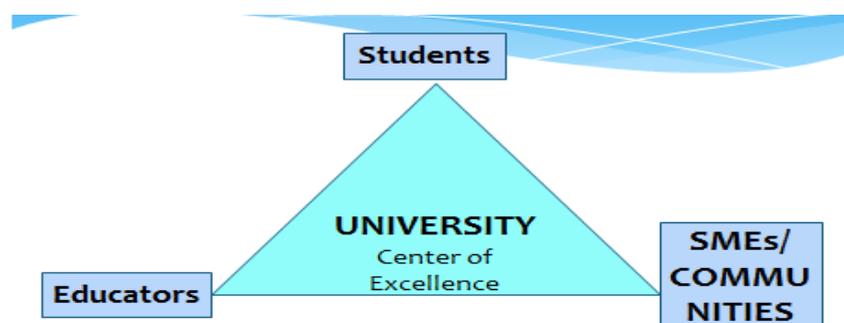


Figure-1: Entrepreneurship knowledge development of communities in Lampung, Indonesia

The knowledge development in entrepreneurship is two-fold; the first stage being to impart knowledge to the entrepreneurs, which is then followed by their finding a position within a firm and can utilize their learnt skills to benefit the business. Considering the conceptions of entrepreneurship knowledge, a number of underlying properties become apparent. First, entrepreneur is taking a risk in the market for profit maximization which has the independence to act flexibly and innovatively. Entrepreneurship knowledge development depends on some criteria, such as market orientation, novel preparation and interpersonal trust. Market orientation relates to the innovation of good and service made available to the market. Knowledge development inherently overcomes, such as institutional or cultural boundaries, many of which require a novel approach to overcome. Interpersonal trust is a success factor in the knowledge transfer process (Heslop, 2008).

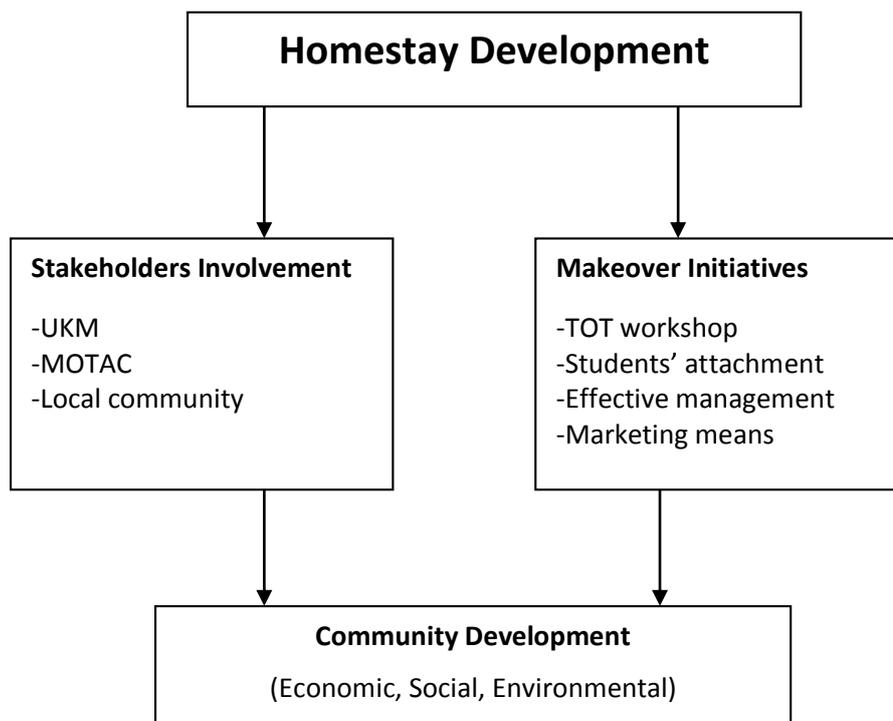


Figure-2: Community development through homestay at Jelawang

Moreover, the UKM-YEPI team is developing the industry of homestay in Kelantan of Malaysia, particularly the Jelawang Homestay. The initiative is enhancing the community development at Jelawang through homestay accommodation with the strong participation of all relevant stakeholders- UKM, Ministry of Tourism and Culture (MOTAC) and local communities. The makeover initiative is ongoing through training for trainers (TOT) workshop, students' attachment and experience the local way of life for effective management and marketing means. The makeover initiative will ensure the community development at Jelawang in terms of social, economic and environmental. In socially, local communities can exchange their cultural, tradition and customs with the guests. Homestay development will enhance economic well-beings such as income generation, employment opportunity and small and medium enterprises development. Moreover, makeover initiatives in homestay will ensure environment friendly accommodation development at Jelawang (Figure-2).

Methods:

The study is qualitative in nature. The study conducted stakeholders consultations to examine the UKM-YEPI team activities for entrepreneurship development in Malaysia and Indonesia. The team facilitates the stakeholders' participation techniques including training for trainers (TOT) workshop, attachment of staffs and students from universities, coaching, monitoring and evaluation for community enhancement. The study reviewed published materials such as research reports, articles and books as secondary sources.

Stakeholders' Involvement: The officials from MOTAC, Kelantan office, academicians from UKM and Universiti Malaysia Kelantan (UMK) and homestay operators took part as participants in stakeholders consultations at Jelawang. The academic staffs and students from IBI Darmajaya, academicians from UKM and local entrepreneurs of Lampung were participating in consultations. The consultation meetings held at last week of February'2014 at Lampung and second week of April'2014 at Jelawang.

Case Study at Jelawang in Malaysia:

The stakeholders consultation identifies that Homestay Jelawang has faced challenges to attract huge guests due to facilities in accommodations, service quality, operational efficiency, training and entrepreneurship, limited capital and proper promotion. Although remaining the suitable conditions, homestay Jelawang fails to attract huge guests due to the limitations;

Facilities in accommodation: The accommodation rooms at Jelawang need clean and hygienic condition to attract the guests. The accessories of the rooms and ventilation systems are important for suitable tourist accommodation.

Quality of services: The satisfactory service qualities of homestay are necessary in terms of serve clean and safe food and fresh water to fulfill the customers' needs.

Operational efficiency: The operational and hospitality experiences of operators can attract more guests in homestay. The operators need languages efficiency to communicate with the foreign guests in homestays.

Training and entrepreneurship: Training and entrepreneurship qualities of operators can increase professional experiences for homestay operation. MOTAC can arrange training for operating assistance for homestay accommodations.

Limited capital: Most of the homestay owners at Jelawang are operating homestay accommodation in small scale range due to shortage of necessary capital.

Proper promotion: Homestay business not flourishes in an expected level Due to effective marketing,. Little investment in professional marketing is barrier for homestay promotion at Jelawang.

The UKM-YEPI program team is continuing makeover program at Jelawang Homestay collaborating with the stakeholders- MOTAC, Kelantan office, UMK, tourism enterprises and local communities. The main initiatives for makeover program are as follows;

Training for trainers (TOT) workshop: This initiative trains the lecturers and students from UMK to prepare them as trainer for homestay development. The UKM-YEPI team facilitates the trainers through their knowledge sharing and training modules to makeover homestay accommodation for community development at Jelawang.

Students' attachment: The students from UMK, UKM and local college have involved exchanging their entrepreneurship and business knowledge with local communities at Jelawang to makeover the homestay operation.

Experience the local way of life for effective management: These initiatives are conducted to bring an “added value” to Jelawang Homestay in its foray to attract local and foreign tourists to experience the local way of life.

Marketing means: This phase of the development plans ensues with students’ involvement in entrepreneurship through company start up and their linkages the Jelawanghomestay and travel agencies through effective marketing means.

The following activities will be taken to develop homestay accommodation at Jelawang for community benefits.

Improved accommodations: The accommodation rooms will be upgraded to meet the guests requirements. The toilets will modify with suitable equipments, facilitate bedrooms with clean and sufficient air circulation, and keep the bedrooms free from bad smell.

Identified products and services: Jelawang homestay have identified the potential products and services to attract the foreign and local guests. The main attractive products and services of this area are Gunung Stong Park, mountains, caves, traditional foods, local hadicrafts, farming and agriculture activities.

Suitable packages: This homestay can offer sustainable tourism packages based on nature, local cultural attractions, traditional events, local food and activities for the guests.

proper pricing, effective promotion:

Increase communication and professional skills: The training program will be taken to develop the skills for homestay operators at Jelawang. For successful operation languages skills training, homestaymanagement courses, IT courses, e-booking courses are necessary.

Pricing and promotion: Proper pricing and prompt campaign is necessary for successful homestay business. The packages and activities of Jelawng homestay will be offer at promotional price to attract more guests.

Case Study in Lampung, Indonesia:

The stakeholders’ consultation identified that the local communities have needed entrepreneurship knowledge to manage and operate their business successfully in Lampung. The UKM-YEPI team facilitates to transfer entrepreneurship knowledge to the local communities to enhance their socio-economic development at Lampung. The grant facilitates the stakeholders’ participation techniques including training for trainers (TOT) workshop, attachment of staffs and students from universities, coaching, monitoring and evaluation for community enhancement. The main activities of entrepreneurship development initiatives are as follows;

- IBI Darmajaya makes use of a classroom-based approach where training-of-trainers (TOT) program is conducted to equip the lecturers with the relevant entrepreneurial knowledge and skills.
- A total of 5 groups have been formed, each of which consisting of nearly 6 to 7 students and a lecturer to facilitate in the development of the different SMEs.
- To ensure smooth sailing of the SMEs activities, coaching and monitoring sessions conducted in the effort to facilitate the exploration of needs and motivation as well as monitor the performance of the teams.
- The coaching and monitoring session at IBI Darmajaya was conducted to monitor the business progress of the respective teams. It was also carried out to evaluate the performance of each team, and where necessary, provide relevant coaching based on their current entrepreneurial ability to optimize their entrepreneurial potential.

- To be able to mobilize their (SME group) course of actions according to their business plans, a total of MYR 1000.00 (≈USD 315.00) has been allocated to each team as seed funding.

The entrepreneurship development initiative enhances the entrepreneur quality of stakeholders for community development at Lampung. The initiative measure the personal attitude, subjective norms, behavioral control, entrepreneurial intention for knowledge transfer. Entrepreneurship development initiative enhance the skills of stakeholders base on entrepreneurship factors, such as extraversion, agreeableness, conscientiousness, neuroticism, openness, confidence, academic support, environmental for entrepreneurship, leadership, innovativeness and family issues.

Stakeholders' Benefits:

Entrepreneurship development initiatives create positive impacts on students, universities, communities and business enterprises in Malaysia and Indonesia which enhance socio-economic well-beings for the local people. The stakeholders' benefits from this initiative are as follows;

Students and youth: The grant is facilitating the students of universities and youth to improve their entrepreneurial knowledge and skills, and promote entrepreneurial culture to become an entrepreneur in future.

Universities and educational institutions: The training-of-trainers provide relevant course materials, hands-on experience and key elements of teaching on entrepreneurship for the lecturers. The universities have managed to develop few courses for entrepreneurship development through the initiative.

Community: The grant develops the entrepreneurship quality of local communities to generate their interest to become an entrepreneur or at least to possess entrepreneurial mind-set. The local communities have benefited economically, socially and culturally through the entrepreneurship development.

Business enterprises: The homestay entrepreneurs get the modification ideas for accommodations and services, offer suitable packages at proper pricing, increase communication skills and professional training through the entrepreneurship development in Malaysia. However, YEPI grant is implementing innovative social business approach for the local entrepreneurs in Indonesia to prepare them for the business world and small business start-ups in agricultural and food processing.

Conclusion:

This UKM-YEPI team works in such a way that entrepreneurs are given necessary entrepreneurial assistance from the educational institutions. The team is implementing innovative social business approach by facilitating the entrepreneurs and improves the businesses of local communities at Lampung and Jelawang. The team ensures entrepreneurship knowledge transfer to the lecturers at IBI Darmajaya by training initiatives to pass down the knowledge to their students through in-house training. The lecturers are receiving the training to provide entrepreneurial knowledge to their students in order to develop entrepreneurial mindset and promote entrepreneurial culture. This can be done through small business start-ups in the agricultural or food processing industry through entrepreneurship knowledge. The team is monitoring the SME business progress and expenses according to their plans by the necessary entrepreneurial lessons.

The UKM-YEPI team develop the homestay accommodation to enhance the economic well-beings as well as social and cultural exchange opportunities for the local entrepreneurs at Jelawang. The grant is developing the entrepreneurship for local community enhancement at Jelawang through homestay accommodation with the strong participation of all relevant stakeholders based on this area's rich biodiversity, natural beauties, environmental attractions and tourism potentials. The local communities will be benefited economically, socially and culturally through the development of homestay accommodation at Jelawng. An integrated approach should be maintained between the stakeholders- operators, government, local community and non-government organization towards developing homestay accommodation in this area. This approach is managing efficient and environment friendly operation and marketing of sustainable packages in the homestay program. The UKM-YEPI team should manage effective balance between the educational, entertainment and commercial elements of homestay for community development.

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Measuring Human Resource Functional-level Entrepreneurship

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Measuring Human Resource Functional-level Entrepreneurship

Abstract

Based on the general consensus that entrepreneurial process can take place in multiple levels of a firm, this study attempts to (a) explore if entrepreneurship can take place at HR functional-level, (b) if it does, is that different from conventional entrepreneurship, and (c) if it is found to be different, developing a scale to capture HR functional-level entrepreneurship. Considering the nature of our research problems, a mixed method approach was adopted. Our findings suggest that HR professionals demonstrate entrepreneurial behaviour in designing and implementing HRM innovations. Having conceptualised HR functional-level entrepreneurship to be unique, we developed scale was to capture it. Our findings, in addition to contributing to theory, provides a useful tool for measuring and improving HR functional-level entrepreneurship.

Operation Next Gen – Reflections on a Pilot Project

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Operation Next Gen – Reflections on a Pilot Project

ABSTRACT:

Operation Next Gen is a pilot project that over a twelve month period took a new and creative approach to addressing a decreasing population of young people (aged 20-39 years) in the three rural Victorian towns of Birchip (pop. 662), Boort (pop. 1,173) and Cohuna (pop. 2,313).

Rather than a formal research project, through positive and creative conversations it aimed to engage, inspire and support these three communities to foster a culture of entrepreneurship and ultimately enable more young people to live and work in their towns.

This project differed because:

1. The community led the conversation and asked themselves “What can WE do to address this problem?” resulting in many different approaches.
2. Everyone was given permission to be creative and think about the future in a new light.
3. Entrepreneurism was a new concept introduced to the conversation.

A survey of nearly 1,000 secondary students across the three shires, conducted by the Center for Rural Entrepreneurship (Nebraska U.S.A.), provided relevant and current data as well as creating some interesting talking points on a global scale.

Like ripples in a pond the conversations continue to create positive change.

INTRODUCTION

Operation Next Gen is a pilot project that was conducted in rural Victoria over a twelve month period from 2012 to 2013 in response to wide community concerns about a decreasing population of young people in rural communities.

Led by Community Leadership Loddon Murray Inc. (CLLM), utilising the power of its extensive graduate network across broad community sectors, this project deliberately took a new and creative approach.

The project’s purpose was to research and trial a model of program delivery aimed at supporting small rural towns to become more entrepreneurial and foster a positive environment to create a wider range of career paths for young people working in rural areas.

Funding of \$30,000 was provided by the Victorian State Government and supplemented by in-kind support from each of the participating shires and organisations.

Three rural Victorian, and predominantly agricultural, towns of Birchip (pop. 662), Boort (pop. 1,173) and Cohuna (pop. 2,313)¹ were selected to participate in the pilot project.

Operation Next Gen was designed to:

- Be a whole of community discussion led by the community
- Be different and creative to stimulate new thought processes
- Highlight the opportunities presented by entrepreneurship in rural areas

In essence the project methodology was to target creative and informed conversations aimed to encourage communities to take control of their own destiny at a very grass roots level.

¹ Australian Bureau of Statistics: Census 2011

Providing relevant and meaningful local data was an important starting point to the conversation.



METHOD:

Project Advisory Committee

To ensure relevance and maximum participation, an Advisory Committee was appointed comprising community and economic representatives from each of the three local government areas plus representatives from the North Central Local Learning & Employment Network (NCLLEN) and Youth Connections Programme. It was no coincidence that five of the seven Advisory Committee members were also graduates of the Loddon Murray Community Leadership Program bringing with them a strong sense of community empowerment principles.

Boort was agreed to be the most central and convenient point for the four meetings held throughout the project. Email was also heavily relied on for communications on a day to day basis. Skype was utilised for communications with the Center for Rural Entrepreneurship in the U.S.A.

Pilot Towns

Selection of the pilot towns was undertaken by the Advisory Committee. Key criteria included:

- One town each from the Buloke / Loddon / Gannawarra Shire
- Under 5,000 population
- Has a business/retail centre
- Concern about future career paths for young people and viability of existing businesses, projected population decline (or generation ratio issues)
- Representatives of businesses, community groups, sporting clubs, school and parents are willing to participate as ambassadors and lead the pilot project at a local level.
- No other major projects that will cause the project to be under-resourced.
- They agree to share their learning's for the benefit of other small towns across the region.

On this basis the towns of Birchip (Buloke), Boort (Loddon) and Cohuna (Gannawarra) were nominated by the Advisory Committee. Alternate towns were also discussed in the event that the invitation wasn't taken up. It was interesting to note that one of the shires could not name a second town that they considered would be ready for this type of challenge. Fortunately all the first choices accepted.

Pictured right: The Shires of Buloke, Loddon and Gannawarra in rural Victoria were the focus of the Operation Next Gen project.



Pilot Town Ambassadors

A broad cross section of well-respected and networked people encompassing the business, community and education sectors was invited to help lead the conversation in each of the pilot towns.

The thinking was that potentially 10 people can reach another 10 people = 100 community members – supporting the ripples in a pond concept.

Each of the shire representatives was allocated the task of extending the invitation to ten people from their nominated pilot town. This was approached in different ways:

1. Directly approached people who met the criteria
2. Allocated the task to a key respected person in the community.
3. Met with key community group and asked them to take on the task.

While each process delivered similar outcomes there was some reflection that it is best not to have the shire representative do the individual invitations so that the community led aspect can be emphasized.

It was acknowledged that, as a pilot project, the concept was difficult to explain and required a “leap of faith” to commit to the process. Those that did commit did so for varied reasons including:

- Concern about the future of their town and/or future of youth.
- A desire to promote business and employment opportunities.
- Intrigued and excited by something new.

To set this project apart from other community planning discussions, meetings took place in very different places. For instance, in Birchip the Operation Next Gen ambassadors met for the first time in a soon to be vacant engineering workshop setting the scene for a very different

style of conversation and posing the question – how can we look at existing landscapes with fresh eyes?



Pictured above: Operation Next Gen ambassadors meeting for the first time in Birchip

Secondary Student Perceptions

How can we have a conversation about how to encourage and influence young people if we don't know exactly what their existing perceptions are?

Rather than limit data collection to just the three participating towns in the pilot project, it was decided that the best way to do this was through an online survey of secondary school students (year 7-12) across the three participating shires of Buloke, Loddon and Gannawarra. This target audience comprised 12 public secondary schools and 1,538 students.

With access to data from over 25,000 youth already collected in rural USA, the Center for Entrepreneurship in Nebraska was engaged to modify their existing youth survey under the guidance of a local Advisory Committee. Whilst important to retain consistency in the data being collected, attention had to be given to terminology differences between the two countries. This had to also be taken into account when the Center was interpreting the results.

As an organisation with no existing relationship, engaging the schools in this survey amidst a period of industrial action was a challenge in itself. A logical step was to partner with the North Central Local Learning & Education Network (NCLLEN) that provided a briefing to principals at their regional quarterly meeting.

Following the briefing a link and covering letter with clear instructions from the Center for Entrepreneurship was emailed to each of the schools. The silence, or more specifically the lack of data input, was deafening.

Follow up calls were made to schools by the NCLLEN and Mayors of the relevant shires to stress the importance of the survey and its intended application in the community. The closing date was extended by a month to ensure that each of the schools had an opportunity to participate.

The survey was designed to be administered online in a classroom environment with teacher supervision. A prize of an iPad was offered to a participating student. On reflection this may have been more effective if offered to a teacher.

Of the twelve secondary schools invited, ten participated in the survey. A total of 888 students (58%) provided a meaningful snapshot of youth perceptions relating to their home town, future education and career plans, and desire to live in the local area in the future.

An opportunity to compare with data from 25,000 rural students in the United States provided an exciting international element to the conversation.

APPENDIX 1 – Student Survey Summary

Individual reports were provided for each of the pilot town schools with additional detail relevant to each particular community.

Pictured right: Following the survey, the prize draw for the iPad took place in the U.S.A. followed by an internal draw for an individual student by the winning school in Donald.



Community Perceptions

Being able to compare adult perceptions with those of youth was considered another interesting element to add to the conversation. An online survey link distributed by email through the pilot town ambassadors to their networks asked adults to answer mirror questions to that of the youth survey in the context of “if they were a young person ...”

112 adults from the three pilot towns participated and helped to highlight some of the significant differences in thinking that were later analysed in workshops by students.

Analysis of Data

A detailed analysis of the student data was provided by the Center for Rural Entrepreneurship while the community data was compiled by CLLM.

Based on the data provided by each of these surveys, the ambassadors from each pilot town led conversations and developed strategies to address priorities for their community.

As a strategy to increase youth awareness and participation, student representatives at each of the pilot town schools were invited to attend a workshop and write a media release on the survey results.

Comparative data from their school, the wider region, community adults, and U.S.A. rural students, provided many points of interest and highlighted the unique differences between each community.

APPENDIX 2 – Survey Comparative Summary

The Loddon Times — Wednesday, April 3, 2013 — PAGE 3



Boort students put pen to paper to reveal their ambitions after assessing the results of the Operation Next Gen survey.

Youths rate town highly

FIVE Boort District School year 11 students recently met to analyse data collected from almost 1000 year seven to 12 students across the region. They were pleased to see that 79 per cent of Boort students rated their community excellent to very good to live in. The survey was conducted as part of the Operation Next Gen pilot project, which involves the towns of Boort, Birchip and Coonah.

The purpose of the survey was to better understand the youth and the community and their future plans. Data was collected by the Center for Rural Entrepreneurship in the United States providing the opportunity to contrast results with rural students across the world. "It gives it a global feel," Student Representative Council member, Anya Eicher said.

Similar questions put to adults across the region revealed that young people are thinking differently. "Adults expect us to be more interested in agriculture," School Captain, Jessica Pay said.

The number one preferred career choice of students was Education or Training followed by Early Childhood Development, Counselling or Care Services. "The survey provides a different understanding of what the younger generation wants than the older generation," Darrell Dodd said.

Sixty per cent of Boort students say that they plan to attend university. This was higher than the region average. "Students are keen to go away to university but 55 per cent picture themselves coming back in the future," Stephanie Couper said.

Interest in owning a business or going into the family business is much lower in Boort than the rest of the region. While students appeared to have little understanding of entrepreneurship the adults surveyed indicated that the main barriers were lack of encouragement, finance and business skills. A common perception of young people is that local businesses are shutting down and the majority of students think that they have to go to the city for a career. With increasing modern technology, it is hoped that this perception will change. "There is an opportunity to think more outside the box here," Raevan Grattan-Watson said.

Successful community case studies

Seeking practical examples of successful community driven initiatives in comparable rural communities was another essential component to inspire the Operation Next Gen ambassadors.

Previous references by academics to similarities between Victoria Australia and Nebraska U.S.A. rural communities led us to form a valuable relationship with the Heartland Center for Leadership Development² and Center for Rural Entrepreneurship³, both based in Lincoln Nebraska and having the experience of collecting data for over a decade.

² <http://heartlandcenter.info/>

³ <http://www.energizingentrepreneurs.org/>

A self-funded study tour and training program with these organisations in the U.S.A. established the project manager’s credentials and provided valuable tools to kick start the Operation Next Gen conversations.

For instance, because of its simplicity and visual context, the “Paint our Town” initiative proved to be one of the most memorable talking points for the pilot town ambassadors that took up the challenge to drive forward the Operation Next Gen project in Australia.



Pictured above: In conjunction with a local photographer and business mentors, students developed business plans for vacant buildings as part of the ‘Paint our Town’ initiative in Benkelman, south-west Nebraska,⁴

Not only did this USA relationship provide inspirational case studies of rural communities such as Ord⁵ and real outcomes over extended periods of time, it provided an important point of difference and talking point to the project - an opportunity for international comparison.

Successful entrepreneur case studies

Utilising CLLM’s graduate and Advisory Committee networks, interviews with successful young people in business around rural Victoria were undertaken throughout the project and highlighted as part of the pilot project conversations demonstrating that entrepreneurship does exist albeit without the title.



A you tube clip was produced as a tool for communities and extended online access.⁶

Pictured above: An enterprising business couple from the Gannawarra Shire being interviewed.

⁴ <http://www.paintourtown.com/>

⁵ http://www.cllm.org.au/ong_communityprofiles.htm

⁶ <http://www.youtube.com/watch?v=bD6YwAu2kLA> (Operation Next Gen: Young People in Business)

Regional Forum

Maintaining conversations in isolation over a twelve month period is a big ask so it was important to give the pilot towns a goal to work towards and the opportunity to share and discuss their ideas.



Pictured above: An entrepreneurial setting – Simply Tomatoes – was selected as the site of a forum over dinner on 22 April 2013 when each of the groups unveiled their plans to the wider community for feedback.

56 people from the pilot towns and surrounding areas attended. The North Central LLEN scheduled its Annual General Meeting to conclude in Boort just prior so that they could attend. Damian Drum, MLC, was special guest.

Hosted by Futurist Paul Higgins, each of the pilot towns had 10 minutes to present their ideas. The ambassadors and guests were then invited to visit each of the pilot town “listening posts” to ask questions and further explore their plans. Copies of their presentations were posted on the website for those who couldn’t make it.

There is no doubt that this forum was a catalyst for each of the pilot towns. They inspired each other and reinvigorated the Operation Next Gen conversation.

RESULTS & IMPLICATIONS:

Operation Next Gen has been a grass roots exercise in planting seeds for the future.

Entrepreneur planning continues

Encouraging business creation

Fresh ideas to foster growth

Entrepreneurism is an uncommon word in rural communities which created an important point of difference. Simply by having a conversation and asking questions, already the anecdotal outcomes are significant. On a shoe string budget community engagement has been meaningful, effective and ongoing.

One year post the completion of the formal project, local newspaper clippings continue to highlight a wide variety of initiatives being driven by the pilot town ambassadors through various community organisations. While some are directly related to business creation, most are aimed at engaging youth and fostering positive relationships with their home towns.

Pilot town initiatives can be viewed online at <http://www.cllm.org.au/operationnextgen.htm>

In their final evaluation survey, 64% of the pilot town ambassadors said that they have been influenced to think differently and 71% have been influenced to act differently as a result of this project. Given the existing skills and interests of the people that took on the role of ambassadors, this is a great outcome and indicative of positive outcomes in the long term.

Operation Next Gen has clearly demonstrated that collaboration brings benefits – that community, business, and educators need to work together to create positive awareness and change.



Most notably, the project empowered a new crop of community leaders. Operation Next Gen ambassadors, not previously involved in leadership, to step up into key leadership roles.

For instance, Cohuna ambassador Sonia Wright (pictured left being interviewed by WIN Television about an Operation Next Gen project to make a vacant store available rent free for a year) is now chair of the Cohuna Progress Association. Likewise a Birchip ambassador was

elected chair of their local progress association.

It demonstrated, first and foremost, that positive change requires wide community support and isn't dependent on a large budget: "Operation Next Gen created more local buy in than anything generated by council," was the observation of a Council Community Development Officer who was a member of the Steering Committee overseeing the project.



The student survey was integral to the project. It provided relevant and current data for each individual community plus the region as a whole.

By simply asking the questions it also introduced business and entrepreneurship as a career consideration. It became clear that rural teachers and students have very little understanding of entrepreneurship. "I learned more about entrepreneurship today than in a whole year of business studies," said one school captain.

Pictured above: students workshopping the survey data for their local newspaper.

Student survey results varied from town to town highlighting that each rural community has the ability to influence youth perceptions. It was also noted that the three pilot schools all recorded higher satisfaction levels relating to their home towns than the region average in the youth survey suggesting an existing culture of willingness to embrace new ideas.

While students have a high regard for their home towns, there is still a strong perception that they need to leave to pursue their chosen career path and earn a higher income. Although strong interest was expressed in going into business in the future (46%), they had little understanding of entrepreneurship and did not appear aware of the opportunities that modern technology brings to rural areas.

Future career choices were diverse with an emphasis on education and training. While adults still think that agriculture and natural resources is the most attractive career path for the region, it was only the third ranked career priority for youth.

For those familiar with common entrepreneur pathways it was heartening to see the arts as one of the top three preferred career paths. Two of the three pilot towns made a conscious decision to use the arts in many of their promotional activities.

International case studies and data comparison provided a key talking point of interest for both the pilot town ambassadors and students reminding us to take advantage of a global environment and the learnings from similar regions.

Compared to rural students surveyed in the U.S.A., our Australian respondents had a higher regard for their home towns (43% vs 69%) and current involvement in a small hobby business (13% vs 23%), but a much lower intention to go on to university or trade school (84% vs 56%).

Of concern were the initial barriers presented by the schools to participate in the Operation Next Gen student survey and the low level of access by teachers to business resources offered to enhance their curriculum materials. This is currently the subject of further research through a new project entitled Down to Business.

While further research is required to measure long term implications, the short term indicators of this pilot study are that rural communities can influence young people to consider and explore potential entrepreneurial pathways in the region. It also demonstrated that communities can be creative and far more effective than government when empowered to take control of their own destiny.

APPENDIX 1



Operation Next Gen Survey Results Summary

Introduction:

The following report summarizes survey results from youth in 7th through 12th years attending schools in Buloke, Gannawarra and Loddon Shires. The survey was conducted from August through mid-September, 2012 by the Center for Rural Entrepreneurship in the United States, in partnership with Community Leadership Loddon Murray and the Operation Next Gen Committee, with the financial support of the Victorian State Government Putting Locals First program.

A total of 888 out of a total of 1,538 students in the region (58%) participated in the survey to measure their perceptions of their community, future education and career plans, and desire to live in the local area in the future. The survey was administered online in classroom environments with teacher supervision. Eleven schools in the region were invited to participate in the survey and all of them completed the survey with their students.

The 9th through 12th year students constituted 56% of total respondents, with 18% being 11th and 12th year students. 44% of survey respondents were 7th and 8th year students. Female and male participants were evenly divided at 50% each of the total survey participants.

Bar charts for the individual survey questions are attached behind this summary along with narrative responses from participants.

Survey highlights include:

A majority of students plan to attend university after high school.

50% of respondents plan to attend university, 15% plan to enter into an apprenticeship or traineeship, and 13% plan to enter the workforce after graduation.

Youth are interested in a spectrum of career opportunities.

Youth indicated interest in a wide variety of career fields, with the most popular options being: Education or Training (24%), Arts, Broadcasting, Film, Printing or Journalism (22%) and Agriculture, Food and Natural Resources (22%).



Most youth feel their community offers a very good to excellent quality of life.

69% of survey respondents rate their community as an above average to excellent place to live as a youth. Only 7% rated their community as a below average to poor place to live as a young person.

A number of youth are interested in owning their own business.

46% of youth surveyed are interested in owning their own business in the future and 23% have a business now. 44% of respondents indicated that they have an existing career option with the family farm or business.

Half of youth surveyed can see themselves living in the local area in the future.

50% of youth surveyed picture themselves living in their hometown area in the future. This response exceeds the combined 28% who indicated very strong likelihood to stay or return to their hometown area (14% stay and 14% return).

Among reasons given for living in their hometown area in the future, 59% indicated it is a good place to raise a family. 58% noted friends and 48% noted family ties in the community. 37% saw local job or business opportunities as important factors, and 33% marked quality school as an important consideration.

Conversely, among reasons for not living in their hometown area in the future, 64% noted career opportunity elsewhere, 48% marked make more money elsewhere, 36% indicated lack of entertainment, 35% saw too few shopping options and 33% felt the community was too small.

Youth have significant ideas on how to improve their community.

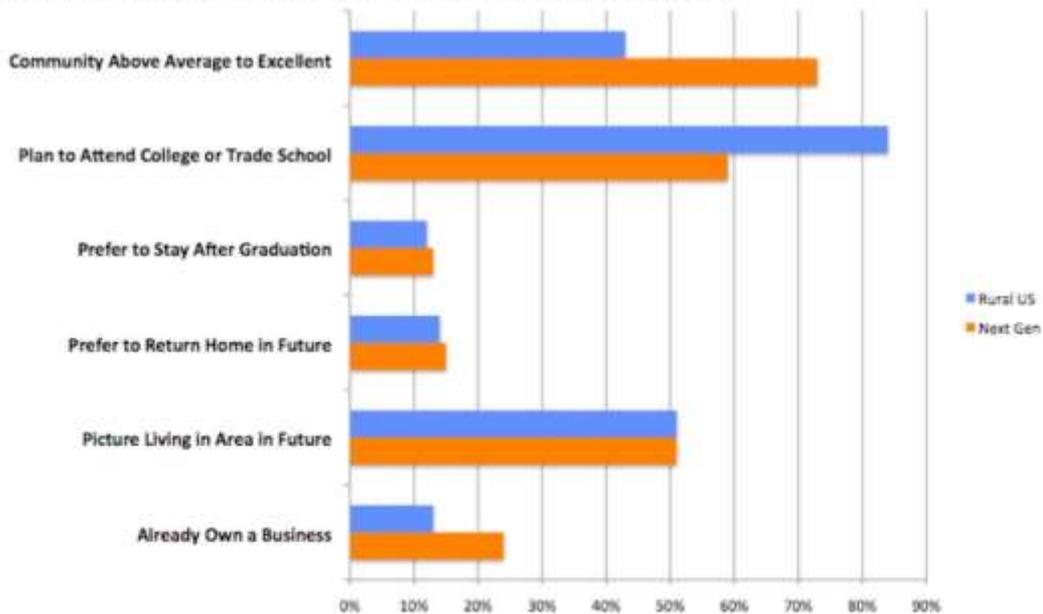
The narrative responses attached to this summary provide insight into what youth feel can make their hometown a better place to live and work. For example, there are well over 700 comments to Question 7, asking youth for their ideas on how to make their community better.

Significant narrative feedback is also provided on businesses youth own right now, what types of businesses they would like to own in the future, what would most motivate them to go into business, what challenges do youth face in this regard that adults need to consider.

There are some variations in responses among youth living in or nearby Birchip, Boort or Cohuna and elsewhere in the region.

Examples include:	<u>Birchip/Boort/Cohuna</u>	<u>Other Communities</u>
Plan to Attend University	59%	49%
Community Above Average to Excellent	87%	65%
Likely to Very Likely to Return to Area	47%	41%
Own a Business Right Now	30%	20%
Picture Yourself Living in Area in Future	57%	48%
Career Opportunity Elsewhere	69%	63%
Too Few Shopping Options	31%	39%
Lack of Entertainment	31%	39%

Comparisons with Rural United States Results





In comparing the Operation Next Gen survey results with data collected from over 25,000 rural youth across the United States, five items of significance emerge:

- 1) A significantly greater percentage of Operation Next Gen participants rate their communities as above average to excellent compared to U.S. rural youth surveyed (69% vs. 43% respectively).
- 2) Many more U.S. rural youth participants plan to attend college or trade school after high school graduation than Operation Next Gen respondents (84% vs. 56% respectively).
- 3) Almost twice as many Operation Next Gen survey participants already own a business as compared to U.S. rural youth respondents (23% vs. 13% respectively).
- 4) There are striking consistencies among Operation Next Gen and U.S. rural youth respondents in regard to interest in living in their hometowns in the future (See bar chart results on page 3).
- 5) Operation Next Gen participants noted very similar motivations for living in their communities in the future and for leaving their communities as compared to U.S. rural youth respondents.

Together, these comparisons indicate that youth in in Buloke, Gannawarra and Loddon Shires greatly appreciate their rural communities overall and that there are significant opportunities to engage young people in the pursuit of entrepreneurial careers, and in staying or returning to the region in the future. Furthermore, the similarities in motivations for wanting to stay or return, or leave their hometowns as compared to U.S. rural youth, indicates that further study of successful approaches to youth engagement in both geographies may be mutually beneficial.

Additional Assessment Information:

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APPENDIX 2

OPERATION NEXT GEN: Year 7-12 Student (Buloke/Loddon/Gannawarra) Survey Comparisons - September 2012

	BIRCHIP	BOORT	COHUNA	REGION AVE	ADULT SURVEY	USA
Number of students completed survey	89	86	151	888	112	
Plan to attend University	60%	60%	50%	50%	N/A	84%
Plan to do Apprenticeship/Trainee	9%	13%	17%	15%	N/A	
Rate community very good / excellent to live	83%	79%	78%	69%	67%	42%
Have a business now	22%	16%	47%	23%		13%
Existing family farm/business career option	35%	44%	55%	44%		
Interested in business	45%	26%	65%	46%	41%	
Motivators for business	\$ Enjoyment of job	\$ Something of interest	\$ Being your own boss			
Challenges of business	Not sure. Inexperienced. Adults don't listen to what youth want	Not sure ? no understanding of entrepreneurship	Don't know Inexperienced Finance Open Minded		Lack of encouragement Finance Business knowledge	
Picture living here after Uni / travel etc	60%	55%	53%	50%	74%	50%
Reasons why	1. Raise family 2. Friends 3. Quality school & family ties	1. Raise family 2. Family ties 3. Friends	1. Raise Family 2. Friends 3. Job or business opportunity	1. Raise family 2. Friends 3. Family ties	1. Family Ties 2. Raise Family 3. Friends	
Reasons why not	1. Career 2. \$ 3. Too few shopping options	4. Career 5. \$ 6. Not interested family farm/bus.	1. Career 2. \$ 3. Too small / entertainment	1. Career 2. \$ 3. Lack of entertainment	1. Career 2. \$ 3. Entertainment	
Preferred Career fields	1. Health Science or Biotechnology 2. Agriculture, food or natural resources 3. 3. Medical, firefighter or police officer	1. Education or Training 2. Early Childhood Development, Counselling or Care Services 3. Agriculture, Food or Natural Resources <u>and</u> Arts, Broadcasting, Film or Journalism	1. Education or Training 2. Science Tech Engineering or Mathematics 3. Arts, Broadcasting, Film, Printing or Journalism	1. Education or training 2. Arts, Broadcasting, Film, Printing or Journalism 3. Agriculture, Food and Natural Resources	1. Agriculture, Food or Natural Resources 2. Education or training 3. Early Childhood Development, Family Counselling or Care Services	

For more information please go to www.clim.org.au/operationnextgen.htm or contact Kerry Anderson on 0418 553 719

Stepping in and Stepping Out: Interfirm Alliance Turnover and the Unplanned Termination of New Ventures

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Stepping In And Stepping Out: Interfirm Alliance Turnover And The Unplanned Termination Of New Ventures

Gold Miners Inc., a small company specializing in gold exploration in Western Australia, started a project in 2002 in the Eastern Pilbara region. Based on promising fieldwork findings, a strategic alliance with mining firm Stafford Gold was formed to found a new business venture called Golden Rose. Over the following six years that alliance was in constant flux. At various times three other companies became part of it, two exited again, then Gold Miners Inc. itself was taken over. By 2007, only Stafford Gold and one other local miner were left. In June of 2008 they decided—having made not one dollar of profit—that it was time the project be terminated.

This story is not unusual for the interfirm alliances that firms form to carry out complex projects. Indeed such alliances frequently undergo significant change over their life (Doz, 1996; Ring & Van de Ven, 1994). Reuer, Zollo and Singh (2002) found that 44 percent of the alliances formed between U.S. biotech and pharmaceutical firms underwent significant post-formation change of some kind. The result is that firms “step in” and “step out” of various interfirm alliances, initiating an intriguing process of turnover that challenges conventional assumptions about alliance evolution and success.

We have a limited understanding of turnover in interfirm alliances and how it influences the outcomes of the project or venture the alliance is concerned with. Classic work has provided theories about the antecedents to interfirm alliance formation (e.g., Ahuja, 2000; Oliver 1990). More recent studies have started to consider how alliances are dissolved (e.g., Polidoro et al., 2011) and how changing alliance patterns aggregate to influence changing network architectures (e.g., Ahuja et al., 2012) but not on changes within alliances. As a consequence, we know comparatively little of the process and consequences of alliance turnover.

To narrow this gap, we will in this paper draw on research that has studied turnover in (top management) teams (e.g., Summers et al., 2012; Wiersema & Bantel, 1993) and a strand of research in entrepreneurship that has studied founder turnover in the context of new ventures (e.g., Beckman et al., 2007; Boeker, 1997; Forbes et al., 2006; Ucbasaran et al., 2003). These literatures have studied the antecedents and consequences of turnover on the team level, which may hold valuable insights for exploring turnover on the level of an interfirm alliance. For example, it has been demonstrated that resource seeking behaviour is an important antecedent to turnover in teams, particularly with regard to new member entry (Forbes et al., 2006), and that environmental change may be a trigger of both entries and exits (Chandler et al., 2005). On the basis of these literatures, two contrasting perspectives on the consequences of turnover can be developed.

On the one hand, turnover may be a form of disruption. Research on team processes (Summers et al., 2012) proposes that changes in membership may disrupt carefully developed cooperation mechanisms and established patterns of interaction between group members. Summers and colleagues (2012), for example, propose that member turnover in teams creates flux in coordination, which disrupts agreed-upon means to carry out tasks and thereby limits team effectiveness. On the level of inter-firm alliances, it has similarly been proposed that partners over time tend to develop inter-firm routines for working together (Levinthal & Finchman, 1988; Zollo, Reuer & Singh, 2002). Membership turnover is likely to disrupt these

routines and hence threaten the “interorganizational equilibrium” that should be harmonious and stable for alliances to flourish (Kumar & Nti, 1998: 361). On the other hand, turnover may be a form of adaptation. Research in the area of top management teams (e.g. Boeker, 1997; Wiersema & Bantel, 1993) has proposed that member turnover among top executives is a way for the organization to overcome inertia (Tushman & Romanelli, 1985) and adapt to a changing environment (Pfeffer & Salancik, 1978). Changes in the environment may erode the value of the initial resource bundle established at the time of venture formation (Volberda, 1996). Adding a member to the team with a needed resource, or dropping one with a skill or resource that is no longer required may thus be an opportunity to re-calibrate resource alignment to the changing environment (Wiersema & Bantel, 1993). In contingency-theory this has been coined an opportunity to make a “structural adjustment to regain fit” which could hence actually be beneficial for venture performance (Donaldson, 1987).

The purpose of this study is to increase our understanding of the effects of turnover in interfirm alliances on the risk of unplanned venture termination. By taking into account the above theoretical perspectives on turnover, we will develop a framework that proposes that membership turnover in interfirm alliances on average increases the hazard of unplanned termination, but that the effects are contingent on the resource base of the entering or departing member relative to that of the alliance as a whole, and on the level of dynamism in the environment.

Our focus is on interfirm alliances formed to establish new entrepreneurial business ventures. We draw on an analysis of a unique in-depth longitudinal study of 1,025 mineral exploration ventures founded in the Australian mining industry over the period 2002 to 2011. Mineral exploration ventures are costly and complex and require commitments of substantial resources (Hartman & Mutmanský, 2002). Hence mining ventures are often founded by alliances of mining firms rather than independent entrepreneurs. We used a Cox proportional hazards model to empirically track different types of changes to the initial founder alliance over time and relate them to the subsequent hazard of unplanned venture termination.

Preparing Entrepreneurship Students for Pre-Learning in Flipped or Team-Based Learning Classes

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Preparing Entrepreneurship Students for Pre-Learning in Flipped or Team-Based Learning Classes

Principal topic

Students traditionally receive instructional input during a lecture and then discuss or apply this information to activities, problems and tasks in subsequent (small group) sessions. Pre-learning methods such as Flipped Learning and Team-Based Learning (TBL) reverse this teaching model, and require students to learn course materials before a class session.

In a flipped learning arrangement students learn the content of instruction, primarily using online resources. They then apply the learning in classroom-based collaborative activities, which include solving problems and relevant learning tasks mainly carried out as group activities in large-group sessions. TBL similarly requires students to pre-learn course material that is assessed individually and in teams at the start of class sessions. This pre-learned material is then used for structured activities designed to help students fully understand course materials and their application. In addition, TBL is designed for students to benefit from collaborative learning in permanent teams.

Pre-learning teaching methods are becoming increasingly popular, for learning effectiveness and efficiency reasons. However, the learning obligations that they impose on students (to pre-learn course materials) can lead to student discomfort or even hostility. Some students were found to not like flipped learning because they were required to complete too great a number of time-consuming tasks before the class, and some preferred traditional lectures because they found it difficult to concentrate or were too easily distracted. There is also a perception that “students are teaching themselves” (Lane 2008, p.57). Other negative aspects in relation to small-group learning are problems such as free riders, team members not motivated to achieve a better grade, and member conflict.

Pre-learning methods also present some challenges for educators. In particular, it has not been delineated how to prepare students for these new learning responsibilities so they can be active participants in a flipped classroom. Such preparation is critical, because for the flipped classroom to be effective, “student understanding of the purpose of the flipped classroom must be properly communicated and students given the opportunity to express concerns about their responsibilities to this new style of learning (and) student buy-in must be gained so they will be committed to the learning process” (Findlay-Thompson & Mombourquette 2014, p.69).

An introductory preparatory class session addresses the documented student problems and the challenges faced by educators, and engages students to successfully participate in courses requiring pre-learning.

Method

A sequence of seven in-class activities leads students to understand their obligations (the learning contract), when they take a pre-learning course. These activities include group formation, arriving at a team name, identifying learning motivations and expectations, introducing students to the whole class, exploring aspects of learning, identifying critical success factors, and reflection on the learning purpose of each of these activities. For each step, there is individual, group and class interaction and explanation by the educator of the learning purpose of the activity.

Participants were undergraduate university students in entrepreneurship foundation courses in Australia. These elective courses implement TBL, and are taken by students from a wide

range of study backgrounds from across the university, and 34% of the classes were international students. Students were accustomed only to course delivery based on large-number lecture sessions combined with small-number tutorial sessions. Student evaluations were obtained using minute papers (Stead 2005). Data relating to student learning motivations and expectations, student perceptions of learning, and critical success factors in learning are analysed using concept mapping.

Findings and Implications

Learning group formation (Step 1) results in a mix of students from different study or discipline areas in each group; this assures different learning backgrounds and different approaches to problem solving. The purpose of the team naming exercise in Step 2 is to help unite the group towards a mutually-held objective. The learning motivations and expectations exercise (Step 3) includes students reporting results to the whole class, and gives students an insight into the range of learning motivations and expectations of their classmates. Step 4 involves a student introducing their team and its members to the whole class (and presenting the results of Step 3). Having each student's name used in the class helps to create a climate where communication is personalised, and students are encouraged to communicate actively across the class. Step 5, the exercise designed to clarify aspects of learning, allows students to explore important aspects of learning (learning content, learning applications and learning how to learn). Step 6 makes explicit the critical success factors and the learning responsibilities for each of the stakeholders in the class (the student, the team, and the educator). Step 7, the classroom review of each of the steps described above, encourages student reflection on, and discussion of, the purpose and contribution of each of these activities.

The session described in this paper uses an active approach to introduce students to the different learning culture they are about to experience. Learning contracts emerge using students' own words, and so become explicit in a manner that is readily accepted by students, rather than being imposed in a traditional manner. This session has been demonstrated by student evaluations and peer review to be effective in preparing and engaging students who were unfamiliar with pre-learning teaching methods. This session is being used by educators in Australia, Russia, US and Canada.

Survival Strategies: How Long-Running Ponzi Ventures Use Isomorphism

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Survival Strategies: How Long-Running Ponzi Ventures Use Isomorphism⁷

Abstract

Destructive or wealth-destroying forms of entrepreneurship (Desai, Acs & Weitzel, 2013) have received very little attention from entrepreneurship researchers but they likely affect how the public perceives entrepreneurial activity. This study focuses on illegal entrepreneurship, explaining how entrepreneurs operating illegal ventures use isomorphism to enhance the legitimacy and survival of their ventures. Specifically, this qualitative study investigates how entrepreneurs who started Ponzi ventures used isomorphism to enable their ventures to survive and thrive for over 10 years. Ponzi schemes are ventures in which entrepreneurs continually bring in new investors in order to use new funds to pay returns to early investors and the entrepreneurs divert investors' money for their personal use. The results of this study show that illegal entrepreneurs use isomorphism in different ways, leading to modifications of institutional theory for illegal entrepreneurship.

Introduction

Survival is a critical goal of most entrepreneurs who start new ventures. They must develop a viable business model (Morris, Schindehutte & Allen, 2005), establish the new venture's legitimacy (McMullen & Shepherd, 2006) and ensure that they carefully manage the new venture's finances to survive in the long term (Barringer & Ireland, 2012). Institutional theory (e.g., DiMaggio & Powell, 1983) suggests that entrepreneurs often make their new ventures look highly similar to existing firms in their industries because isomorphism connotes legitimacy (Deephouse, 1996; Deephouse & Suchman, 2008), enabling firms to survive and prosper. Researchers have focused substantial attention on isomorphism among organizations but studies primarily involve isomorphism among legal organizations. Little attention has been given to how illegal entrepreneurs may use isomorphism to make their ventures appear legitimate and to escape detection by law enforcement agencies.

We address this gap in the literature by using institutional theory and mimetic isomorphism to theorize and test behaviors used by illegal entrepreneurs to make their ventures appear legitimate and ensure long-term venture survival. The particular form of illegal entrepreneurship used in this study involves entrepreneurs who start Ponzi schemes. Ponzi entrepreneurs establish illegal ventures that use new investors' money to pay returns to earlier investors (Valentine, 1998). In essence, they create an elaborate shell game that involves continually raising new funds, transferring recent investors' money to earlier investors as their return on investment, and diverting substantial sums of money for the Ponzi entrepreneur's personal use. Illegal entrepreneurship can at times be ambiguous and difficult to identify, as in the case of ethnic entrepreneurs who operate in the informal and at times illegal economy (Ojo, Nwankwo & Gbadamosi, 2013), moving back and forth between unregulated and unlicensed activities to fraudulent ones; it could also include entrepreneurs who engage in corrupt activities in transition economies that lack a coherent legal infrastructure (Tonoyan, Strohmeyer, Habib & Perlitz, 2010). In contrast, this study focuses on entrepreneurial activities expressly prohibited by law and that are destructive or wealth destroying (Baumol, 1990; Desai et al., 2013). The definition of illegal entrepreneurship used here represents a modification of Stevenson and Jarillo's (1990) definition of entrepreneurship: the processes by which individuals pursue opportunities without regard to the law or to the resources under their control. Thus illegal entrepreneurship involves starting new ventures to exploit opportunities

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prohibited by law and using illegal means (e.g., diverting organizational funds for personal use).

This paper makes several important contributions to the field of entrepreneurship. Firstly, illegal entrepreneurship has been virtually ignored by entrepreneurship scholars (see Ojo, Nwankwo & Gbadamosi, 2013). Some attention has been given to the informal economy (e.g., Ojo et al., 2013; Webb, Bruton, Tihanyi & Ireland, 2013), entrepreneurial activities outside of traditional institutional boundaries, legal bottom-of-the-pyramid ventures operating in institutional voids (Mair & Marti, 2009) and small business scams (Schaper & Weber, 2012). Most research focuses on productive forms of entrepreneurship with little attention to unproductive types and almost no attention to destructive forms (Baumol, 1990). Destructive entrepreneurship involves wealth-destroying activities such as demolishing raw materials or inputs used in production, diverting or misappropriating startup capital for personal purposes or stealing resources from venture capitalists or other potential investors (Desai, Acs & Weitzel, 2013). Most theories and empirical research in entrepreneurship rest on the assumption that entrepreneurship is a positive, wealth-generating and job-creating activity that benefits society (Desai et al., 2013). This study relies on a different assumption, namely that some entrepreneurs will pursue their own self-interest to an extreme, ignoring the negative, wealth-destroying and public trust-destroying effects they have on society. This study contributes to the field of entrepreneurship by drawing attention to illegal entrepreneurship and how destructive entrepreneurs operate. Secondly, we apply institutional theory in entrepreneurship to illegal entrepreneurship in an effort to begin to understand how well entrepreneurship theory can account for destructive forms of entrepreneurship. Institutional theory, particularly the notion of isomorphism (DiMaggio & Powell, 1983), suggests that illegal entrepreneurs interested in long-term survival should make an effort to design their ventures to look similar to legal, legitimate businesses. We develop a model based on the literature on isomorphism and conduct a qualitative study of 35 illegal ventures that were able to survive and thrive for over 10 years. The goal of this research involves drawing greater attention to illegal forms of entrepreneurship and hopefully increasing interest in examining how well theories of entrepreneurship developed for productive forms apply to destructive types of entrepreneurial activity.

The organization of the paper is as follows. It begins with a review of the literature on institutional theory and isomorphism in entrepreneurship that guide the qualitative analysis in this study. An explanation of the cases used in this study and the qualitative methods follow that, along with the results. The paper concludes with a discussion of the implications this study has for theory and future research.

Literature Review

Scholars relying on institutional theory maintain that organizations often adopt forms, rules and procedures that represent myths about how they ought to organize (Meyer & Rowan, 1977) rather than choosing forms that allow for the most efficient operations. Institutional theory explains the high degree of homogeneity or similarity among organizations in a specific industry or environment (e.g., Deephouse, 1996; DiMaggio & Powell, 1983; Meyer and Rowan, 1977). Mimetic isomorphism or the tendency for organizations to adopt similar forms arises in part as organizations attempt to deal with uncertainty in their environments (DiMaggio & Powell, 1983). The purpose for new ventures engaging in mimetic isomorphism is that it allows these ventures to gain legitimacy, greater access to resources and it likely increases the chances of survival (Meyer & Rowan, 1977). New ventures often

fail, particularly in the early stages of the ventures, so activities that can enhance survival are essential and provide new ventures with a competitive advantage (Brown, 2012).

Institutional theory and specifically mimetic isomorphism—adoption of similar forms—helps reduce the uncertainty surrounding new ventures. This uncertainty stems from the fact that little information exists about new ventures, they lack a track record or demonstrable performance and have not built a reputation since reputation is typically based on prior performance (Bitektine, 2011): new ventures “have virtually zero identity (Brown, 2012: 414). Their goals and their ability to achieve them may be highly uncertain, making it imperative that new ventures look similar to existing organizations: “The more ambiguous the goals of an organization, the greater the extent to which the organization will model itself after organizations that it perceives to be successful” (DiMaggio & Powell, 1983: 155).

Institutional theory has not been applied to illegal entrepreneurial ventures but it likely accounts for many of the decisions and actions involved in establishing illegal organizations.

New illegal ventures face substantial uncertainty associated with operating outside of the law and thus these ventures may benefit from mimicking successful legal entrepreneurial ventures and other successful firms in their industry. Survival for illegal entrepreneurs hinges in part on avoiding detection and establishing the legitimacy of their ventures. The more illegal ventures can achieve “taken for granted” status as organizations in an industry (Aldrich & Fiol, 1994), the greater their legitimacy. This means that more stakeholders view these illegal ventures as acceptable and legitimate new businesses in society, making it less likely that questions will be raised about their operations or that someone will report the organization to legal authorities.

Entrepreneurs starting and operating illegal ventures will therefore try to identify ways to build legitimacy as a key resource (Zimmerman & Zeitz, 2002) because this ensures profitability and longer-term survival. Institutional theory suggests that an effective way to do this involves adhering to institutional myths or organizational forms and practices viewed as appropriate and taken for granted (Meyer & Rowan, 1977; Aldrich & Fiol, 1994). Oliver (1991) maintains that institutional theory encompasses organizations actively pursuing their own interests with regard to institutional pressures and expectations; although institutional theory implicitly assumes that organizations pursue legal and ethical interests, we extend institutional theory to explain the strategic behavior of illegal entrepreneurs.

Illegal entrepreneurs will deliberately and strategically manipulate institutional expectations to create legitimacy and reduce uncertainty for their ventures. Organizations can engage in strategic or deliberate actions to create legitimacy rather than having to passively accept institutional norms or myths of behavior (Oliver, 1991). The institutional environment may constrain the choices available to the new venture to a degree, but the new venture chooses how to respond to institutional pressures (Oliver, 1991). Five types of responses are possible, ranging from acquiescence or fairly passively going along with standard practices all the way to the other end more assertive end of the continuum with manipulation, as in trying to control or influence the source of the institutional pressure. While acquiescing is supposed to be fairly passive with legal and ethical organizations, even this end of the continuum represents more of a strategic choice or manipulation of the environment (Pfeffer & Salancik, 1978) when used by illegal ventures. One tactic associated with an acquiescence strategy entails imitation (Oliver, 1991) and illegal ventures will likely attempt to imitate and adopt similar organizational and institutional practices—or at least the appearance that they are complying with these—as used by similar but legal operations. Legal and ethical organizations in existing or established fields try to look like established successful firms in

their industry and as investors expect them to look (Lovvorn & Chen, 2013) and this provides a valuable strategy for illegal ventures: the more illegal ventures resemble established, successful organizations, the more they will be viewed as legitimate.

Since “institutions guide behavior by means of the rules of the game, monitoring and enforcement” (North, 1990 as cited in Bruton, Ahlstrom & Li, 2010: 422), illegal ventures need to appear to adhere to established practices in business and in their specific industry such as producing financial statements for the organization, providing investors with monthly account statements and using relevant legal documents (contracts, prospectus and so forth).

Prior research supports specific practices likely used by illegal entrepreneurs engaging in mimetic isomorphism. Institutional theory emphasizes that organizations adopt forms similar to successful firms in their industry and this notion of “form” can encompass institutional rules related to the organization structure or legal form (e.g., sole proprietorship, LLC, corporation and so forth) as well as dimensions of form that derive from myths held by members of society. For instance, larger organizations tend to be viewed as more legitimate than smaller organizations so illegal ventures will likely attempt to appear larger in size. The organization structure, if it mimics that of successful organizations, can enhance the illegal venture’s legitimacy (Deephouse, 1996); this can include the use of positions, position labels and titles of holders of key positions in the organization (Meyer & Rowan, 1977). Illegal ventures will tend to adopt position titles and create positions or hire individuals for activities that reassure the ventures’ stakeholders of the similarity of these ventures to successful legal organizations. The illegal venture may rely on large numbers of employees in particular positions such as sales people, brokers and other individuals whose affiliation with the organization signals legitimacy. Similarly, illegal new ventures will engage in business or industry practices viewed as “standard” or appropriate (Deephouse, 1996) that fit with myths that stem from with legal mandates or that represent business rituals (Meyer & Rowan, 1977). These could include preparing financial statements for the venture, sending monthly account statements to investors, providing copies of contracts the venture purportedly has with customers or suppliers, producing a private placement memorandum or prospectus and so forth. Legal organizations appear to increase their legitimacy by adopting strategies similar to those of successful firms in their industry (Deephouse, 1996) so illegal ventures are expected to adopt a similar approach, particularly by selecting industries or competitive environments that appear low-risk or relatively secure and stable. Another mechanism used by illegal entrepreneurs to gain legitimacy involves affiliating with established organizations that have solid reputations since certain actors can confer legitimacy (Deephouse, 1996) and alliances also convey legitimacy (Brown, 2012). Finally, since prior financial performance can signal the “appropriateness” of businesses, illegal ventures will ensure that they provide investors and other stakeholders with indications that they have performed successfully in the past. This discussion of institutional theory as it applies to illegal entrepreneurial ventures leads to the following research question: *To what extent and in what ways do illegal ventures use mimetic isomorphism to increase their ventures’ survival?*

Methodology

The type of illegal entrepreneurial behavior investigated in this study involves entrepreneurs who start and run Ponzi schemes. These entrepreneurs convince investors to provide them with large sums of money but the investors spend only a small amount of this on the intended venture activities; instead, some of the money goes toward paying returns on investment to early investors and much of the money is diverted for the entrepreneurs’ personal use. Little ambiguity surrounds the legality and ethical nature of these ventures. These entrepreneurs typically violate securities laws by offering investment opportunities that represent “securities”

without registering the offering with the SEC, without providing required information to potential investors, presenting fraudulent information and so forth. Additionally, Ponzi entrepreneurs often co-mingle funds from multiple investments and businesses and typically use large amounts of venture monies to support their own lifestyle.

A dataset was developed of 584 Ponzi schemes identified and prosecuted in the U.S. during the period 2003-2013⁸; this study used a subsample of 36 Ponzi ventures that survived for 10 years or more. Since illegal entrepreneurs need to build legitimacy in order to ensure their ventures' survival and survival has been argued to provide "the key measure of interest" when studying legitimacy (Brown, 2012: 416), this research investigates Ponzi ventures that survived for longer than average. A recent study of 329 Ponzi ventures occurring after 2002 that raised at least \$1 million showed that on average, they survive for 5.3 years and accumulate a median of \$20 million from investors (Marquet, 2011). In order to ensure that this study focused on long-term survival, a period of 10 years was selected as the cut-off point, nearly double the average life of a Ponzi venture. Survival was measured from the start of the Ponzi scheme which was the same date as the start of the venture in some cases but for other cases where the entrepreneur started a legal and legitimate firm initially, it was the date when the entrepreneur launched the Ponzi scheme. Qualitative data were gathered on each of the 36 ventures using data from legal cases (e.g., from the SEC, FBI or other U.S. government agencies), newspaper and magazine articles, television news reports or news magazines and other sources.

This qualitative study uses purposive sampling or selecting cases according to one of the key constructs of interest, namely survival of the illegal venture. This relies on the use of purposive or judgement samples used in many prior entrepreneurship studies (e.g., Dess, Lumpkin & Covin, 1997; Norton & Moore, 2006) and international entrepreneurship studies (e.g., Coviello & Jones, 2004). While purposive sampling typically limits generalizability (Coviello & Jones, 2004; Dess et al., 1997), the heterogeneity of the sample based on numerous industries, organizational strategies and size of ventures may enhance generalizability somewhat (Dess et al., 1997). This approach to sampling was viewed as essential for investigating relationships that have received very little attention in entrepreneurship as well as ensuring a sample of illegal ventures that had similar survival rates (since the overall goal involves understanding what may contribute to long-term survival of illegal ventures).

Qualitative analysis of the data permits comparisons across both contexts and organizations and allows us to rely on richer data on the illegal ventures (Dyer & Wilkins, 1991; Eisenhardt 1989). The objective of this research involves understanding 'how' and 'why' (Yin, 2009, 2012) illegal ventures survive for long periods of time, making qualitative research especially appropriate. The data analysis used protocols outlined by Denzin and Lincoln (1998), Eisenhardt (1989, 1991) and Yin (2009, 2012). An effort was made to search for, compile and group data related to factors identified as important in institutional theory. This made it easier to evaluate the illegal ventures' adoption or nonadoption of institutional theory factors. A table was constructed to group data related to particular dimensions commonly associated with institutional theory: a) the organization form including use of organization charts, procedure manuals, strategy documents or business plans, records of the entrepreneur's performance in adhering to regulatory standards or requirements, the number and types of entities created, titles and positions in the organization and the legal form of organization; "acceptable" industry or business practices such as any conduct typical for businesses in a particular industry or engaging in specific activities such as creating a

⁸ Special thanks to Jordan Maglich for sharing his Ponzitracker database (www.ponzitracker.com) that identified many of these Ponzi schemes.

prospectus or private placement memorandum for investors, producing financial statements for the venture, providing monthly account statements to investors and providing copies of contracts between the venture and customers or suppliers; strategies related to the choice of business or industry to see if patterns exist related to the business(es) the Ponzi entrepreneur purported to operate and how the entrepreneur depicted his or her venture's strategy to stakeholders; affiliations or alliances established by the Ponzi entrepreneur that lent credibility and legitimacy to the venture, such as choosing banks, partner organizations and individuals that have known brand names and successful track records of performance; communications related past performance of the Ponzi venture in order to whether and how the illegal entrepreneurs may communicate and emphasize their past successful performance to investors and other stakeholders through corporate documents, marketing activities, presentations or other communications and through symbolic actions. These five groupings appeared to capture the major actions by the illegal entrepreneurs in this study; not all entrepreneurs engaged in all of these activities, used them in the same ways or to the same extent or degree as the other entrepreneurs.

Results

Several patterns exist in the data related to the organization form used by the Ponzi entrepreneurs. Firstly, the majority of illegal entrepreneurs went to the effort of adopting a specific type of business format, typically either LLCs or formally incorporating the business while a few larger ventures were established as holding companies that owned and operated a number of other entities. Secondly, these illegal entrepreneurs establish multiple entities to make their businesses appear larger and more successful. In 27 of the 35 illegal ventures, the entrepreneurs created new LLCs, companies, corporations or other types of legal entities underneath the original parent company. Kenneth McLeod, founder of F&S Management Group, operated a business providing retirement planning seminars to the DEA and other government agencies as a legal business and MCMG, a legal mortgage lending company; these two businesses were used to bring in investors for his illegal Ponzi Venture called Federal Employee Benefits Group (FEBG). Similarly, Thomas Petters set up Petters Group with a number of legitimate businesses such as Fingerhut and Polaroid and that helped establish the legitimacy of his firm. Petters then set up three illegal ventures, Lancelot LLC, Arrowhead LLC, and Stewardship LLC that were investment funds that brought in money that Petters used for his personal expenses and to support his legitimate businesses. In other cases all of the entities were illegal ventures. For example, James Koenig established his Asset and Real Estate Investment Company and then created an additional 50 affiliated companies in order to mimic larger successful firms. Thirdly, the organization forms used varied depending on the size of the organization. Ponzi ventures that were very small in terms of number of employees (e.g., the Ponzi entrepreneur and a small number of employees operating in a single office) exhibited a very simple organizational form similar to legitimate small businesses. Large ventures adopted forms similar to legitimate large corporations. For instance, Kenneth McLeod's F&S Asset Management Group adopted an organizational form with multiple layers of management to help oversee the 38 branch offices in the organization. Similarly, Thomas Petters had 3200 employees because he owned or had invested in 60 businesses; thus he set up Petters Group Worldwide as a holding company and then established managers to help oversee the companies and their operations. Most of the illegal ventures including the smaller ones used titles such as Chief Financial Officer, Chief Executive Officer or Managing Partner as are commonly seen in legitimate ventures.

Ponzi ventures use a number of industry and business practices that convey or signal appropriate or expected business conduct. The majority of them provide investors with

promissory notes or certificates of investment, often accompanied with written guarantees that the principal of their investment will not be touched and the investor can withdraw his or her funds at any time. Additionally, these illegal entrepreneurs understand that their investors will be concerned about risk so they use business practices associated with more secure investments: some of them emphasize that their investments are insured by the government while others specify that property or other tangible assets provide collateral that could be used in what they refer to as the unlikely event of a loss, and still others offer a guarantee that their personal funds would more than adequately cover any losses. They all appear quite adept at communicating that their approaches offer superior safety to other investments on the market, including CDs, money market accounts, and so on. They all provide investors with monthly statements showing their investment and the interest accruing on it and they typically offer investors the “opportunity” to have their income on the investment automatically reinvested. Additionally, some of these illegal entrepreneurs set their management fees on par with their industry while a few emphasize that they choose to deviate from the industry by charging minimal fees; in contrast, one of the illegal entrepreneurs. Finally, since these entrepreneurs know that legitimate companies produce financial statements each year, most of these entrepreneurs prepare financial statements for their firm; they occasionally allow investors to see or have copies of the statements but more often, they talk about their firm’s performance in their regular newsletters sent to investors or in presentations to solicit new investors.

One interesting use of mimetic isomorphism involves these illegal entrepreneurs’ strategies for their ventures. Most of these long-term Ponzi entrepreneurs select businesses and industries perceived to be relatively low risk and that appears to increase their chances of survival. Some industries have more legitimacy than others (Zimmerman & Zeitz, 2002). For instance, Edwin Fujinaga described his firm’s strategy as purchasing discounted medical accounts receivable from doctors, hospitals and other medical facilities who were waiting for insurance companies to reimburse them and then Fujinaga’s firm would get the full payments from the insurance companies. Michael Turnock’s strategy involved providing bridge loans for small businesses to pay their insurance premiums in cash and get a discount while paying interest on the loans to Turnock’s firm. As these examples illustrate, the long-term Ponzi entrepreneurs appear very adept at creating a strategy for their companies that involves operating in industries and businesses known to be secure or in high demand. None of these illegal entrepreneurs targets risky ventures such as starting or financing restaurants, building shopping malls, opening retail establishments and so on.

A key area in which these long-term illegal entrepreneurs excel at using mimetic isomorphism entails the formation of affiliations or alliances with successful legitimate firms or individuals. This allows the illegal entrepreneurs to gain legitimacy through their association with these other established and successful individuals and organizations (Zimmerman & Zeitz, 2002). In some cases, the affiliation is fabricated such as Richard Piccoli putting the Better Business Bureau logo on his company’s stationery or Kenneth McLeod who claimed to have an MBA from Wharton and a law degree. Even the illegal entrepreneurs who falsify some of their affiliations have a number of legitimate ones that reduce the chances of their lies being detected: McLeod participated in a number of golf tournaments and other fund-raising activities with DEA and other law enforcement personnel to raise money for the Survivors’ Benefit Fund or the First Responders Fund or donated large sums of money directly to these funds; Piccoli advertised his business in Catholic magazines and newsletters, touting the number of clergy who were investors and offering them as references to potential investors. All 35 illegal entrepreneurs in this study used legitimate banking and financial institutions to process (launder) and move around their funds; many of

them relied on well-known and respected banks such as Chase, Wells Fargo and BB&T while a few of them used smaller banks and credit unions. The data are not available to know whether or to what extent these illegal entrepreneurs consciously chose the financial institutions or what their criteria might have been for selecting one or more of them but the result is the same: stakeholders such as investors implicitly assume that banks and financial institutions monitor large deposits, withdrawals and movement of money between various corporate accounts and certainly between corporate and individuals' personal accounts. Thus the affiliation that these illegal entrepreneurs formed by carrying out their Ponzi schemes using legitimate financial institutions lent legitimacy to the entrepreneurs' operations.

Illegal entrepreneurs whose ventures survive for a number of years appear quite successful at communicating their high past performance to investors and other stakeholders. They make a point of emphasizing the number of years in which they have operated, claim that their firms have never experienced a loss over those years and tout their exceptional performance even during poor economic times. While long-term survival likely reduces the chances of detection and even self-perpetuates most illegal ventures, in the case of Ponzi ventures, it represents a double-edged sword: the longer they operate, the more investors they acquire and the more money it takes to continue to pay earlier investors and keep the scheme going while at the same time, longevity makes Ponzi ventures appear more legitimate. This likely explains why some of the long-term Ponzi entrepreneurs in this study relied solely on word-of-mouth advertising or would only accept investors who were referred by current investors.

Discussion

Overall, the results showed that Ponzi entrepreneurs who operated illegal ventures over the long term were quite skilled at using mimetic isomorphism or making their businesses look similar to other successful firms in their industries. This has important theoretical and practical implications. Institutional theory appears to work very well in explaining the long-term survival of Ponzi ventures, showing that some theories used in entrepreneurship may apply equally well to both legal and illegal ventures. Illegal ventures that look like legal entrepreneurial firms may be difficult to detect and may operate alongside legal ventures for substantial periods of time. One key difference in this study involves entrepreneurs deliberately using isomorphism versus some of the literature in institutional theory or even population ecology that depicts isomorphism as a process that simply evolves over time.

The results should also raise concerns among entrepreneurship scholars since Ponzi entrepreneurs seem quite successful at using the knowledge developed and taught by academics to mimic legal and ethical ventures. Entrepreneurship scholars and educators need to differentiate between legal and illegal entrepreneurial activity in our research and teaching or we run the risk that society may become increasingly wary of any type of entrepreneurial activity.

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Serendipity and International Entrepreneurial Opportunities

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Serendipity in International Entrepreneurial Opportunities

ABSTRACT

Serendipity plays a role in internationalisation (e.g., Wood et al, 2011; Spence et al, 2008; Tiessen & Merrilees, 1999) in born-global high technology and traditional manufacturing SMEs. It has typically been portrayed as anomalous findings arising from chance although recent evidence indicates it may be much more important to internationalisation than previously indicated (Wood et al, 2011). This study utilises an abductive research methodology that begins with a deductive review of the literature and develops a conceptual process model of serendipitous internationalisation which is inductively tested using empirical data from three representative cases of manufacturing firms taken from twelve cases in three different firms types originally developed on knowledge-based Canadian Natural Health Products (NHP) (i.e. dietary supplement) SMEs. The conclusions contribute to the debate surrounding serendipity and its role in the discovery of international entrepreneurial opportunities and are of potential value to SMEs seeking opportunities to develop their ventures internationally.

INTRODUCTION

Serendipity has been shown to play a role in internationalisation (e.g. Schweizer et al, 2012; Wood et al, 2011; Johanson & Vahlne, 2009; 2006; Spence et al, 2008; Chetty & Agndal, 2007; Çalışkan et al, 2006; Spence & Crick, 2006; Crick & Spence, 2005; Spence, 2003; Hohenthal et al, 2003; Tiessen & Merrilees, 1999; Merrilees, et al, 1998) of born-global high technology and traditional manufacturing SMEs. A number of authors have suggested that serendipity provides a framework within internationalisation for studying the initiation of relationships and the pursuit of opportunities (e.g. Crick & Spence, 2005; Jones & Coviello, 2005; Coviello and Munro, 1997; Tiessen & Merrilees, 1998) but studies on serendipitous opportunities and how they shape SME internationalisation are rare (Hohenthal et al, 2003). In studies which have investigated networks in internationalisation (e.g. Hohenthal et al, 2014; Meyer & Skak, 2002) serendipity has been attributed simply to anomalous and unexpected, although not necessarily ‘surprising’ chance events.

This research study uses an abductive research design. It deductively reviews the literature and uses it to propose a new conceptual model of serendipity in the identification of international opportunities that includes key elements, state and change variables and a range of serendipitous outcomes. Empirical data derived inductively and selected from three representative cases of manufacturing firms, selected from one of three different firm types and twelve cases originally developed in this study on knowledge-based Canadian Natural Health Products (i.e. dietary supplement) SMEs, are then used to test the proposed model. The study adds to the discussion on serendipity and identifies the first process model of serendipity in the development of international entrepreneurial opportunities.

This paper is organised in the following manner. The existent literature on serendipity and within internationalisation is first reviewed; key gaps identified; and then used to propose a conceptual model of serendipity in internationalisation. We next provide an overview of the abductive research process and then describe and discuss the findings before concluding with a summary of key outcomes, recommendations and implications for future research.

LITERATURE REVIEW

Serendipity has been described in the literature as “good luck that comes by accident— a result, not an ability” (Martello, 1992:80); or “effort and luck combined and joined with alertness and flexibility” (Denrell et al, 2003: 978). Napier & Vuong (2013: 175) defined it as “the ability to recognize and leverage or create value from unexpected information.” The serendipity pattern has been described as “observing an unanticipated, anomalous, and strategic datum which becomes the occasion for developing a new theory or extending an existing

theory” (Merton and Barber, 2004: xxi). Serendipity is presumed, therefore, to be something that cannot be predict in advance, but rather recognized only once it occurs.

Fine & Deegan (1996: 438) suggested that serendipity included “a temporal component (‘being in the right place at the right time’), a relational element, (‘the unplanned building of social networks’) and an analytical component (‘the ability to establish connections between actual data and ideas).” The temporal component assumes that if an observer is not in the right place at the right time, then they may not observe the information which triggers serendipity and identify any opportunities arising from it. While researchers have indicated that individuals must be in the right place at the right time, why should the location be so restrictive? Being in the wrong place, or a new place, at the right time, might also provide an individual with an opportunity to see things they have never seen before; to view them differently; or to connect those events in new and meaningful ways. Chance, therefore, plays a role in not only who we meet and know, but also in when and where we meet them. Much has been made of the role of chance in serendipity. In the Oxford On-line Dictionary (2014) chance is defined as “the possibility of something happening” or “the occurrence of events in the absence of any obvious intention or cause.” Chance, therefore, represents only one element, i.e. an event, in the pattern or process of serendipity and does not equate to the entire pattern of serendipity.

Louis Pasteur said that “chance favours the prepared mind” (Brown 2005: 1232) meaning that curiosity, open-mindedness, education, training, reading and experience may play a role in serendipity and, conversely, that an unprepared mind ignores anomalous discoveries and loses the opportunity to leverage them. When prior knowledge is related to education or specialised knowledge that individuals possess (Shane, 2000); or if it is acquired through idiosyncratic experiences, some individuals will, as a result, recognize opportunities, problems, market characteristics, or ways to create products which others do not (Roberts, 1989). In opportunity discovery, three dimensions of prior knowledge have been shown to be important: knowledge of markets; ways to serve markets; and knowledge of customer problems (Ardichvili et al, 2003). Given that an individual must have a mind that is ‘prepared’ with related prior knowledge in order to recognize an accident, clue or opportunity, and the motivation to enact it, serendipity cannot be attributed entirely to the role of chance (Weisenfeld, 2009; De Rond, 2005). Entrepreneurs ‘connect-the-dots’ using previously developed cognitive frameworks, that they are allow them to recognise and make sense of patterns, develop new knowledge and identify opportunities that arise as a consequence (Baron, 2006). De Rond (2005), therefore, describes chance as an event and serendipity as a strategic capability.

Weisenfeld (2009:140) expanded Merton & Barber’s (2004) serendipity pattern to include five essential elements and elaborated them as: “an accident or clue (characteristic of the situation), an observation (seeing), sagacity (knowing), and motivation (bringing together), within the context of a micro-environment that is conducive to take up the discovery”. In Weisenfeld’s model chance plays a role in whether or not an accident or clue actually occurs, and in whether or not an individual will make an observation to notice the accident or clue that leads to connecting-of-the-dots and an eventual discovery or opportunity. Chance may, however, also be a factor in whether the individual observes an event leading to an opportunity, has the entrepreneurial capabilities, the individual dimensions and the sagacity necessary for serendipity to occur and to enact any opportunities. It may also affect the microenvironment in which the event triggering serendipity and the individual observing it are located. For example, firms must exhibit both the substantive capabilities (i.e. the ability to problem solve) and the dynamic capabilities (i.e. the ability to change the way the firm solves problems) (Zahra et al, 2006), and have access to the resources necessary to enact whatever organisational changes are needed to realise opportunities which arise serendipitously.

Mendonça et al (2008: 13) pointed to the need for organisations to allow staff adequate time and space for creativity, and to develop a propensity to explore the periphery through the use of “inductive approaches that involve trial and error, informal contacts and noticing, experiments and heuristics whereas those (that) tend to rely on deductive approaches, formal reports, intelligence documents and other means... discourage serendipitous findings.” Flexibility around organisational structure which shows deference to expertise, rather than structure and hierarchy, may assist individuals in firms to be more open to serendipity (Denrell et al, 2003).

Van Anandel (1994) identified seventeen different forms in which serendipity occurred. These were then categorised into three distinctly different types of serendipity including: positive, negative (Barber & Fox, 1958) and pseudo-serendipity (Roberts, 1989). Positive serendipity arises from an accidental discovery and the use of sagacity (Barber & Fox, 1958) such as occurred in the discovery of Penicillin, when Fleming, seeking new treatments for influenza accidentally discovered Penicillin (De Rond, 2005). Negative serendipity occurs when something surprising is identified but never followed through by the discoverer (Barber & Fox, 1958). Columbus’s discovery of America where he did nothing with his finding but others who came afterwards did is an example of negative serendipity. Pseudo-serendipity involves inventing something that participants are searching for but doing so in a ‘surprising’ manner (Roberts, 1989). This occurred in the discovery of the double helix structure of deoxyribose nucleic acid (DNA) when Crick and Watson, its discoverers realised, while talking to other researchers with different backgrounds, that the structure they were looking for, rather than being a single strand, was actually two strands of DNA, held together in a helical structure (De Rond, 2005).

Several researchers have noted that serendipity provides a framework for studying the initiation of relationships and the pursuit of opportunities within internationalisation (Jones & Coviello, 2005; Crick and Spence, 2005; Coviello and Munro, 1997; Merrilees et al, 1998, Tiessen & Merrilees, 1999) but studies on serendipitous opportunities and how they shape SMEs internationalisation have been rare (Hohenthal et al, 2003). A review of the recent literature indicates that this continues to be the case.

Internationalisation Processes

Entrepreneurial opportunities have been defined in the literature in a variety of what are often ambiguous and contradictory ways (McMullen et al., 2007) including: “*those situations in which new goods, services, raw materials, and organising methods can be introduced and sold at greater than their costs of production*” (Casson, 1982 in Shane and Venkataraman, 2000: 220); an idea (Davidsson, Hunter & Klofsten, 2004); an unexploited project (Casson & Wadeson, 2007); and a business form or potential venture (DeTienne & Chandler, 2007). According to Kirzner (1997) entrepreneurial opportunity is about being alert to discoveries that other entrepreneurs know nothing about while Schumpeter (1934) suggested that innovation and innovative ideas provided opportunities for increasing value and could include such things as the exploitation of new markets, methods of production, sources of materials or organisational methods. Hansen et al, (2011, p: 285), in their review of entrepreneurial opportunity, summarised, ideas in the debate on what opportunity is as: “*a process that occurs over time (de Koning, 1999); in a moment of insight or accidental discovery (Long & McMullan, 1984; Demmert & Klein, 2003); the result of an active systematic search (Fiet et al., 2005); is constructed in the present (Fletcher, 2004); the result of a cognitive process (Gaglio & Katz, 2001); an effectuation process (Saravathy, 2001); or even a creative process (Dimov, 2007).*”

Globalisation is rapidly changing the way firms do business (Dana & Wright, 2003) and increasing the number of SMEs participating in international activities (Babakus et al,

2005:125) and seeking new international opportunities and new ways to enter markets in the process. Many high technology and knowledge-based born-global firms seek entry into international markets faster and sooner given global competition (Oviatt & McDougall, 1994). Easy access to travel, the internet, and the opening up of many countries to international trade and investment, have combined not only to provide easier access to global opportunities, but to also create challenges for SMEs to adapt and take advantage of those opportunities (Etemad, 1999). Those managers, therefore, learn to react swiftly to international opportunities when they are presented, rather than following an incremental approach to internationalisation (Crick & Jones, 2000) and can gain advantage in the marketplace.

Internationalisation has been defined as “the process of increasing involvement in international markets,” and is a process which may not be planned, sequential or even intentional (Welch & Luostarinen, 1988: 36). The international process or Uppsala model, the most widely accepted experiential learning model of internationalisation suggests that firms follow a linear, gradual process of internationalisation from similar to dissimilar markets and increasing commitment to those markets as they gain knowledge about foreign markets and the process of internationalisation (Johanson & Vahlne, 1977). Firms that enter foreign markets may encounter differences in psychic distance, as well as new political, economic and institutional settings that differ widely from their home countries. Psychic distance has been defined as “the sum of factors preventing the flow of information to and from the market... (and includes such things as) language, education, business practises, culture, and industrial development” (Johanson & Vahlne, 1977: 24). These differences not only generate a high level of uncertainty and risk for SMEs, but they also identify the need for firms to learn how to exploit the discovery of new international markets and opportunities (Hohenthal et al, 2003). Chance may, therefore, play a role in whether psychic distance and institutional factors in the macro and meso environments affect a firm’s entry into particular countries.

In a review of fifteen Canadian and Australian cases of serendipitous internationalisation taken from three prior (i.e. Lamb & Leisch, 1996; Merrilees & Miller, 1998; Tiessen & Merrilees, 1998) studies, and where serendipity was defined as the faculty of making desirable but unsought-for discoveries, Merrilees et al, (1998: 6) identified four common elements of serendipity in internationalisation that included: “1) chance meetings, sometimes in unusual circumstances, 2) a clear perception of a business opportunity, 3) a rapid response to clinch the opportunity, and 4) having resources and skills which ‘rise to the occasion’, that is are flexible to meet, implement and take advantage of the new opportunity.” These findings highlight the importance of a triggering event, observation, sagacity, and motivation as important elements in the serendipity pattern similar to Merton & Barber (2004); De Rond (2005); and Weisenfeld (2009). The findings in Merrilees et al’s (1998) study, however, limited serendipity to only chance meetings but we know from other management research that serendipity can take a variety of other passive and reactive forms (e.g. De Rond, 2005; Napier & Vuong, 2013).

Tiessen & Merrilees (1999) developed a model of entrepreneurial SME internationalisation utilising four Canadian and two Australian cases of serendipitous internationalisation to explain the process of international market selection and in doing so, illustrated that SMEs followed a four stage process which included: a) network referrals and meetings in which entrepreneurs widened their horizons and had the chance to identify potential opportunities; b) identification of emerging opportunities where an opportunity for one might be a hopeless encounter for others; c) a predisposition to respond quickly to relevant opportunities; and d) resource leverage or the adaptability of resources to enable implementation. Their model failed, however, to indicate exactly where serendipity took place in the process or what factors contributed to its involvement.

In internationalisation, serendipity has recently been widely defined as “recognizing chance opportunities and being able to take advantage of them” (Crick and Spence, 2005: 171). While this definition alludes to the involvement of a triggering event, an observation, sagacity, and motivation, it does not specifically reference them. As a result, these important aspects of serendipity are often neglected in papers which have subsequently used this definition and serendipity treated simply as either an anomalous or unexpected, although not necessarily ‘surprising’, strategic event resulting solely from chance. These opportunistic ‘chance’ events have taken a variety of forms in the literature including: chance meetings, recruitment of managers with foreign work experience, unsolicited orders (e.g. Johanson & Vahlne, 1990; Crick & Spence, 2005; Spence & Crick, 2006; Chetty & Agndal, 2007), unexpected referrals or meetings (e.g. Merrilees et al, 1998; Tiessen & Merrilees, 1999; Meyer & Skak, 2002; Schweizer et al, 2013); trade shows and fairs, government trade missions (e.g. Çalişkan et al, 2006); and owner travel (e.g. Meyer & Skak, 2002; Schweizer et al, 2013). In some of these papers, the events did appear unexpectedly and triggered a pattern of observation, recognition; the use of sagacity and the creation of an internationalisation opportunity (e.g. Chetty & Agndal, 2007). In these instances, ‘serendipity’ obviously occurred. In other papers (e.g. Çalişkan et al, 2006), the outcomes were actively sought, and since there was no guarantee, at the time, of a successful outcome, when the outcome did finally appear it was still attributed entirely to serendipity when in reality it was more likely only chance and, therefore, likely fit the definition of pseudo-serendipity rather than serendipity per se. Unfortunately, Crick & Spence’s definition makes no distinction between the two types of serendipity or how the elements might have differed.

Spence (2003) in a strategy study of Canadian high technology SMEs found that these firms internationalised in three different ways including: by using networks, ‘serendipitous’ (i.e. chance or accidental) encounters, or through the execution of planned strategies. She suggested that since networks created meaningful situations which facilitated serendipitous encounters serendipity could, therefore, to some extent be, actively and systematically planned (Spence, 2003: 292). Subsequent studies of UK high technology firms (Crick & Spence, 2005); firms in European border regions (Çalişkan et al, 2006); Canadian and UK high technology SMEs (Spence & Crick, 2006); British SMEs (Child & Rodrigues, 2007); and Canadian international new venture technology SMEs; also found that the firms used a combination of both similar ‘planned’ strategies and opportunistic behaviour to internationalise serendipitously.

Network relationships have been shown to result from either serendipitous events or systematic searches where successful first arms-length transactions can lead to additional business between firms (Johanson & Vahlne, 2006). These relationships are exchange events involving resources, services and information, where mutual commitment exists in interdependence, trust, and knowledge, (e.g. needs, capabilities and routines) and where the relationship continues so long as both partners benefit from it (Johanson & Vahlne, 2006). Serendipitous events have also been linked to the unplanned building of social networks which played a role in serendipitously or unexpectedly triggering mode of entry changes in internationalisation (Chetty & Agndal, 2007).

Social capital refers to a firm’s network of relationships and the resources which can be acquired from its network (Adler & Kwon, 2002). Nahapiet & Ghoshal (1998: 258) noted that “meetings and social events provide unplanned and unstructured opportunities for the accidental coming together of ideas that may lead to the serendipitous development of new intellectual capital.” Serendipity plays a triggering role in social capital, where weak ties, formed between former employees or those of former business partners, and unsolicited approaches from third parties, may lead to changes in firms’ internationalisation modes (Chetty & Agndal, 2007). Social capital may also encourage cooperative behaviour i.e. the

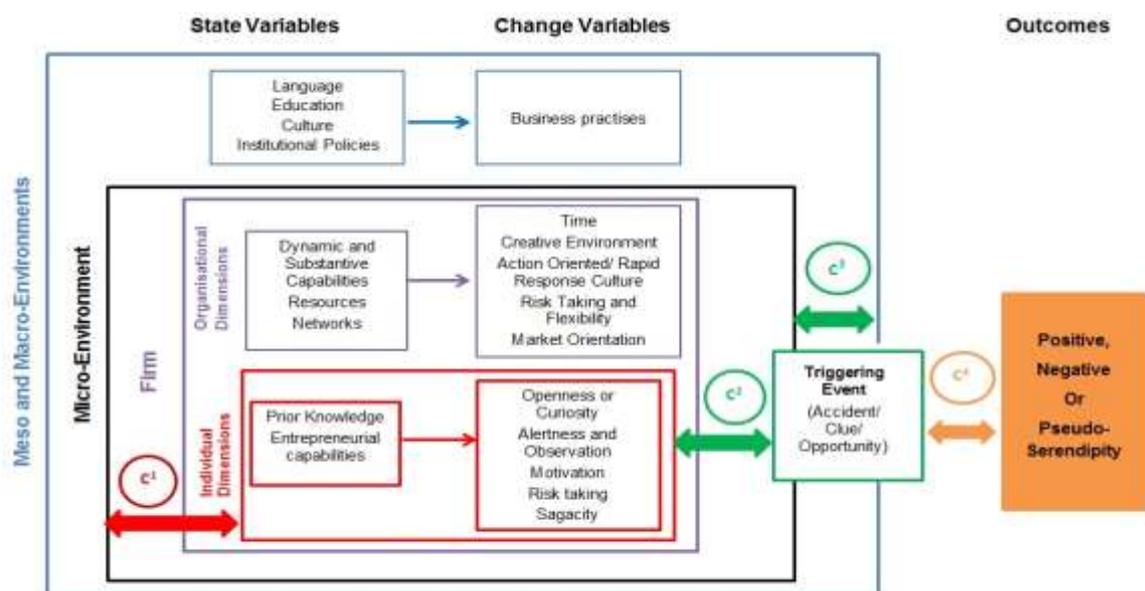
development of mutual trust and shared meanings, which help to reduce uncertainty and increase the effectiveness of joint activities (Johanson & Vahlne, 2006).

Burt (2004: 351) calls serendipity the ability “to see bridges where others see holes.” While people must have the ability to see and make connections through serendipitous insights into knowledge, they still require infrastructures such as networks to help them see new opportunities and reap those benefits (André et al, 2009). Firms use network ties to link into knowledge and opportunities in a larger network with wider significance than their own immediate ties and needs (Johanson & Vahlne, 2006). There, they learn both, from and about one another, and create new knowledge about opportunities through networks (Johanson & Vahlne, 2006) and social ties rather than by conducting systematic market research (Ellis, 2000). Much of how we approach problems or discoveries and what we do with them may also be influenced by others in our networks, especially in the early stages of a firm’s development. Recent work has shown that the richer the social capital in networks that firms have the greater the development of knowledge and making of discoveries using bisociation processes (Cunha et al, 2010) where entrepreneurs ‘connect the dots’ using previously developed cognitive frameworks which allow them to recognise and make sense of patterns and hence, develop new knowledge and opportunities that arise as a consequence (Baron, 2006). Despite the fact that network relationships have been shown to play a critical role in the internationalisation of SMEs (Johanson & Vahlne, 2003) it remains ambiguous as to whether or not network relationships in internationalisation studies all illustrate the same characteristics (Johanson & Pao, 2010).

Conceptual Model of Serendipity

In utilising the information presented, to this point, we now propose a new conceptual model of serendipity as illustrated in Figure 1. It builds on the prior work on serendipity by Fine & Deegan, (1996) and Weisenfeld (2009) and on internationalisation by Johanson & Vahlne (1977, 1990, 2003, 2006, 2009); Merrilees et al (1998); and Tiessen & Merrilees (1999).

Figure 1: Conceptual Model of the Elements of Serendipity



Note: C¹, C², C³, and C⁴ represent only some of the possible locations of chance

Source: Authors

The model incorporates state and change variables leading to serendipitous outcomes including discoveries or opportunities. Similar to Weisenfeld (2009) we have divided the model into five essential components: an individual, an event, an observation, a microenvironment and a serendipitous outcome and then added additional meso and macro-environments. Unlike her model which illustrates that chance is two-fold, our model illustrates it to be at least four-fold and, therefore, of much more importance to the process than previously thought. Chance in this model occurs at: C¹ i.e. whether or not an individual with the correct prior knowledge will be present in the same micro-environment in which the event and the individual are located. At C² chance determines whether or not the individual is in a location in its environment (micro, meso or macro) to observe an event which acts as a trigger to serendipity. Chance also occurs at C³ and determines whether or not the micro-environment interacts with the macro environment to produce serendipity such as when regulatory policies change. Finally, chance at C⁴ determines whether or not the individual or the firm will actually be motivated to develop or take advantage of the opportunity.

Triggering events leading to serendipity may occur in our model in any of the micro, meso or macro environments given that location is not restricted to being in the right place at the right time but rather being in a location that gives rise to the connection of prior information with new information. We have also noted the outcome can be one of three different forms of serendipity: positive, negative and pseudo-serendipity as suggested in prior literature. This conceptual model will now be tested using empirical data derived from case studies of the serendipitous internationalisation of international new venture, knowledge-based Canadian NHP SME firms.

RESEARCH FOCUS AND METHOD

This research uses an abductive research process which combines inductive and deductive methods to allow the refinement of theory based on insights derived from data (Dubois & Gadde, 2002). The use of multiple approaches allows for the development of more robust theoretical contributions based on more varied empirical evidence developed by adding cases to the level of saturation and increasing generalizability (Silverman, 2012). A deductive strategy allows the use of theory in the development of hypotheses or theoretical models against which data is then tested. It may be used to illustrate how variables are measured and explain causal relationships (Blaikie, 2010). The inductive research strategy requires that the researcher choose a set of characteristics, collect data related to those and to then draw generalisations which can be used to develop conceptual frameworks (Blaikie, 2010). The multiple case study method allows for the in-depth inductive investigation and understanding of real life complex phenomena and processes that occur when SMEs internationalise; then extends this experience to learning from previous research; and provides a vehicle through which several qualitative methods or sources of evidence can be combined (Yin, 2009).

The researchers began this study inductively focusing on the role of networks in internationalisation. Firms were drawn from the supplier membership directory of the Canadian Health Food Association (CHFA), the largest trade association representing the interests of this sector in Canada and reselected based on their ability to meet the Canadian definition for SMEs; were based in one of two large NHP industry clusters in Toronto or Vancouver's greater metropolitan areas; and in each case, had already internationalised and fit the definition of international new ventures. A minimum export ratio/sales turnover was not specified in an effort to obtain a range of firms exhibiting varying degrees of internationalisation. The firms selected were all independent, and not subsidiaries of larger domestic or international companies, in an effort to avoid the effects of potential resource and cultural influences on decision-making. The participating firms were then further reselected based on firm sub-types

consisting of: regulatory service consultancies (RSCs); combined ingredient supplier and contract manufacturer firms (ISCM); and manufacturing firms with their own brands (MFB).

During the first round of inductive research, each interview lasted between 60 and 90 minutes and was conducted either in person in Toronto, or using Skype internet telephone service if located in Vancouver. A firm founder, or member of each firm's senior management team, who was known to the researcher⁹, was interviewed using a semi-structured interview process either once or twice over a period of two years, beginning in 2011. The focus of the interviews was on the development of case histories illustrating the firms' internationalisation patterns. To increase the construct validity of the study, we used semi-structured in-depth interviews and standardized the order of the questions which allowed the subjects to generate their own ideas in addition to what we may have identified from the previously from the literature (Yin, 2009). We followed a similar strategy in all subsequent rounds of interviews as well. All interviews were transcribed verbatim and the resulting text coded using NVivo software to identify key themes, patterns and typologies. A comparison of the Skype and in-person interviews showed no difference in the richness of the data.

A second round of semi-structured interviews was conducted two years later with seven of the nine original firms because two of the original MFB firms in the study had been sold to larger international partners and, therefore, no longer qualified as SMEs to participate in the second round of interviews. During the analysis of the data, the data from those two firms was found to be so rich from the first round of their interviews, that their interviews were still included in the final set of findings. The second round of semi-structured interviews focused on the firms' network composition and development, and what specific roles networks and third parties played in the internationalisation process of each firm. This second round of interviews was again conducted either in person in Toronto, or using Skype internet telephone service if located in Vancouver. The same member of the firm's senior management team was re-interviewed. Each interview lasted one and a half to two hours and was again transcribed verbatim and coded using NVivo to develop themes, patterns and typologies. Two additional firms available at the time, including one ISCM and one MFB firm were also added. In those instances, both sets of questions were asked so the interviews lasted three to three and a half hours and were similarly recorded, transcribed, coded and analysed. For this study, given that the manufacturers used the majority of serendipitous opportunities we selected three of those firms as representative of that particular sub-type.

The researchers during the analysis of the case studies enjoyed serendipity themselves, when they realized during the coding process that each of the firms involved had serendipitously internationalised to not just one market, on one occasion, but to multiple markets, on multiple occasions and using different triggering events. They then returned to the literature on serendipity in internationalization and utilised it to identify additional gaps in knowledge and deductively using it to guide and propose a new conceptual model of serendipity. The author then returned to the data to test the proposed model and confirm what state and change variables were present in the cases utilised.

FINDINGS AND DISCUSSION

The three manufacturing firms selected (Table 1) ranged in size from 125 to 350 employees and with founding dates ranging from 1965 to 1982. All the firms began internationalising prior to the introduction (Health Canada, 2011) of the Natural Health Products Regulations in 2004 but internationalised significantly thereafter as a result of their ability to then meet higher pharmaceutical standards internationally. (Previously they were classified as food supplements in Canada.) All three firms were established by immigrants.

⁹ The lead author is a former President of the CHFA, who has represented the association's interests both domestically and internationally and is therefore well known within the industry.

Knowledge is an important component of organizational success in health-sciences-based and drug-regulated industries and in internationalization. In this study, entrepreneurs established all of the firms based on prior experience in the NHP or drug industry, or on NHP-specific, or academically-related knowledge. One firm was established by an immigrant (with advanced degrees), another by the children of immigrants to Canada, and the third by an entrepreneur whose family had been in Canada for at least two generations.

Table 1: Firm Backgrounds

Firm	Owner 's Background	Year Founded	Year Internationalised	Number of Countries Internationalised	Number of Employees
A	Pharmacist; now operated by journalist son	1965	2003	More than 40	350
B	Accountant in the NHP industry	1982	1982	More than 20	160
C	Retail baker using natural ingredients	1967	2000	More than 20	125

The MFB firms internationalised as illustrated in Tables 1 and 2 using a mix of internal and external stimuli which independently motivated both their initial export market entry and later expansion. The firms all internationalised using similar patterns, first through serendipitous opportunities those arose from Canada's Immigrant community.

Table 2: Internationalisation process for all firm types

Serendipitous Opportunity Sources	Stage 1 Experimental	Stage 2 Active	Stage 3 Committed
Unsolicited orders from foreign customers	X	X	X
Immigrant social/business networks	X	X	X
Transnational Entrepreneurs	X	X	X
Owner Travel		X	X
Trade shows		X	X
Government trade missions		X	X
Industry-led trade missions		X	X
Ethnic staff and internationally experienced managers		X	X
Strategic alliances		X	X
Foreign Direct Investments			X

Immigrants and transnational entrepreneurs in Canada, their families, and business and social networks in their home countries specifically sought out MFB firms with successful Canadian brands and products with high regulatory standards for quality and safety. They then offered to assist directly the firm to enter their home country and ones nearby, or to introduce them to foreign distributors and agents in countries where they knew there were ready markets for these products. In those countries, they introduced the MFBs into their own highly educated (often

familial) networks consisting of government regulatory officials, distributors, and marketers, and manufacturers amongst others. The following comments provide an example of this activity:

“As you gain domestic sales and Canada is a very multi-cultural type of society, as people immigrate here and they see what’s on the market and they see the successes, they want to carry those products and take it back to their home countries where they have connections. It’s only in 2003 that we’ve decided to take a very planned and strategic action towards international and we established our international sales department” (Vice President International, Firm C)

After initially using distributors, brokers or agents and practices to enter many export markets very successfully the MFBs formed specialized internal ‘international’ departments to support its market expansion; developed new criteria based on their direct experiential knowledge to evaluate markets and to qualify new distributors and agents. A combination of unsolicited orders, participation in trade shows and trade missions also allowed the firms to make new connections with other distributors and agents in other countries. Later, they also used strategic alliances, FDI and international trade consultants to increase penetration of their existing export markets and to locate new markets. Firm A entered into a strategic alliance with a larger, global pharmaceutical firm to allow it to learn new systems and gain additional international experience by extending its product reach and profile, and gaining insights into unfamiliar markets while also generating new business opportunities. Firms B and C made foreign direct investments into markets that were strategic for entering regional markets they were interested in pursuing, typically after first successfully using a distributor or agent there.

The firms utilised the language capabilities and skills of their own immigrant staff to assist them in operating internationally and hired internationally experienced managers who were also often immigrants to staff and lead their international department in Canada. The owner’s son in Firm A travelled internationally in an unrelated job, and often suggested underdeveloped markets for the firm to enter or located interesting ingredients and products for the firm to introduce both domestically and into many of its foreign markets around the world. These MFBs are now internationalised to more than 20 different markets and most regions globally.

Serendipity Pattern and Typology

The proposed model of serendipity in internationalisation as noted in Figure 1 was confirmed empirically in this study. Each of the five elements in the serendipity pattern (an accident, an observation, the use of sagacity, motivation and a microenvironment) appeared to play a role in the internationalisation process of these firms confirming Weisenfeld (2009). In addition, a new element, the macro-environment, which in this case took the form of the unique macro Canadian institutional environment for natural health product regulation (Nestmann et al, 2006), also played an important role in the process.

The individual entrepreneurs appeared to be predominantly alert, open and curious to new opportunities especially in the early stages of internationalisation. They explored the periphery of their environments and vicariously increased their knowledge of markets, market entry strategies, cultures, business practises, and regulatory environments through domestic and international business and social networks. In doing so they were able to observe and locate numerous new opportunities serendipitously. When presented with new opportunities to learn, either by watching others or taking part in experiences where they could mitigate risk such as through third party immigrant approaches with shared opportunities, they used their entrepreneurial capabilities and were motivated to investigate each possibility. They used prior knowledge and sagacity to determine whether or not each event and the resources they had could be leveraged into valuable new international opportunities.

While the study data confirmed a number of other important findings on accepted concepts, this is the first time that the work of these others has been brought together and

integrated both in this model and with the serendipity literature. For example, it was apparent, that entrepreneurs ‘connected-the-dots’ using previously developed cognitive frameworks which allowed them to recognise and make sense of patterns and hence new knowledge and opportunities that arose as a result (Baron, 2006). The entrepreneurs were also able to link into knowledge and opportunities in networks that had much greater significance than their own immediate ties and needs. Since serendipity requires prior knowledge in the form of a prepared mind, experienced entrepreneurs that had more prior knowledge, were better able to access and filter serendipitous opportunities especially when they are related to their specialised knowledge, which in this case was product knowledge similar to prior work of Shane (2000) and also prior knowledge arising from internationalisation experience (Johanson & Vahlne, 1977; 1990; 2009).

The locations of the events which triggered serendipity showed that the individuals (typically entrepreneurs or owners) in these firms could be in the right place at the right time as illustrated in receiving unsolicited orders, but also in the wrong place, i.e. in their offices in Canada to receive international opportunities serendipitously from third parties; or in an appropriate place such as trade shows or as participants in trade missions where chance meetings could take place.

Chance played several different roles as illustrated in Figure 1. It occurred as indicated at C^1 , i.e. whether or not an individual with the correct prior knowledge was present in the same micro-environment in which the event and the individual were located. At C^2 chance determined whether or not the individual was in a location in an environment (micro, meso or macro) to observe an event which acted as a trigger to serendipity. Chance also occurred at C^3 when the micro-environment the firm, interacted with the macro environment to produce serendipity. For example, interest in Canadian products and Canadian SME firms became elevated after the introduction in the macro-environment of new higher NHP regulatory standards which classified the products as drugs unlike most other international regulatory environments for dietary supplements. Other serendipitous opportunities were also triggered by Canada’s unique immigration and multicultural regulations which encouraged multicultural diversity in the country and also the presence of educated immigrants who triggered serendipity. Finally, chance at C^4 determined whether or not the individual or the firm were actually motivated to develop or take advantage of the opportunity once serendipity occurred.

Each of the firms exhibited both substantive capabilities (i.e. the ability to problem solve) and dynamic capabilities (i.e. the ability to change the way the firm solves problems) confirming Zahra et al, (2006). The firms leveraged and connected resources and networks domestically and globally over time which contributed to serendipitous outcomes. Having an orientation to new markets and learning from prior experiences that included knowledge of markets and ways to serve them and of customer problems, and confirming Ardichvili et al, (2003) contributed significantly to the firms deciding which opportunities were the most valuable and which were not. All the firms also made internal organisational changes such as the creation of new departments, and products which led to further opportunities.

Risk taking and flexibility were also obviously important in that the firms had to determine whether or not the risks of taking up the opportunity were possible within the firm’s limited resources, and whether their new partners or the markets were worth the risk. In the early experimental stages of serendipitous internationalisation, it was apparent that all three firms realised that the psychic distance associated with entering international markets was one of their greatest challenges and risks to successful internationalisation.

All twelve firms, including the three representative cases presented here internationalised using only serendipitous and pseudo-serendipitous opportunities in the early experimental stages of internationalisation and to a lesser extent on an ongoing basis over time as illustrated in Table 2. This finding builds on prior work by Tiessen & Merrilees (1999) in

Canada and Johanson & Vahlne (1977; 2003; 2006; 2009) on serendipitous internationalisation and adds to the literature on process in internationalisation. Positive serendipity occurred where the firms were not looking for anything when immigrant and transnational entrepreneurs located in Canada and their family, social or business networks located in foreign markets provided the most extensive range of new opportunities. Chance meetings and unsolicited orders similarly were also serendipitous. When the firms were looking for markets to enter, owner travel located some of these destinations and, in other instances, also identified new ingredients and products which the firms could utilise to enter those markets serendipitously. Pseudo-serendipity occurred in instances where the firms actively sought out new markets but had no networks to assist them. At trade shows and on trade missions, the firms met companies by chance who could assist them in this process by offering them opportunities to manufacture or distribute goods into foreign markets. Negative serendipity also arose when the NHP SMEs decided that the opportunity did not warrant enactment for a variety of reasons including because they were not as valuable as initially thought; that they were for the same markets that the firm had already entered or previously considered; that the amount of resources needed to enter the market was not warranted given the market size, or value; or that the resources were unavailable to enact it. This happened more frequently in the active and committed stages of internationalisation after the firms developed criteria for markets they were interested in pursuing, learned how to select distributors and agents, and created internationalisation departments which could undertake this evaluative process more efficiently and effectively.

While several of these triggers have been noted previously in the literature, they have typically been attributed simply to chance or 'serendipity' in general rather than any specific type of serendipity. Among those previously included in the literature in this fashion were chance meetings, piggy-backing of clients, business or social network referrals, the recruitment of managers with foreign work experience, receipt of unsolicited orders confirming Johanson & Vahlne (1997); Spence (2003); Crick & Spence (2005); Spence & Crick (2006); Agndal & Chetty (2007); unexpected network referrals or meetings confirming Merrilees et al (1998); Tiessen & Merrilees (1999); Meyer & Skak (2002); Schweizer et al (2010); trade shows and fairs, government trade missions confirming Çalışkan et al (2006); Spence (2003); Crick & Spence (2005); Spence & Crick (2006); and as a result of owner travel (Meyer & Skak (2002)). This study has clearly identified that depending on the context, these may be cases of either serendipity or pseudo-serendipity and need to be clearly differentiated in future.

CONCLUSIONS

This study makes a number of unique contributions to the serendipity and internationalisation literature and challenges or extends others. First, the study proposed a new model of serendipity in the development of international opportunities based on existing theories and literature and then confirmed the model using empirical evidence derived from three of twelve cases developed on Canadian NHP SMEs. This model highlights the importance of a wide range of state and change variables which contribute to different types of serendipitous outcomes in internationalisation and builds on prior work by Johanson & Vahlne (1977; 1990; 2003; 2006; 2009); Merrilees et al, (1998) and Tiessen & Merrilees (1999). The limitations of this study include the small sample size and the single industry utilised, and so the process model should now be tested in larger samples and across different types of firms. Additional research is needed to determine what other events may trigger the serendipity process; what other elements may be part of the process; and what other types of serendipitous internationalisation may exist but which have yet to be described. Both new and existing knowledge-based firms may also wish to investigate how they can create environments which stimulate the development of serendipity and the creation of other international opportunities.

This study generated the first research findings on the previously unstudied NHP industry. Given that this was the first work, (outside practice-based research on regulatory model comparisons) on this industry, future research might usefully be extended to include a wide variety of topics to provide a multidimensional and complementary base of academic literature about this rapidly growing industry, and its business needs. The conclusions are of potential value to policymakers seeking to boost international trade and to SMEs searching for opportunities to develop and sustain their ventures internationally.

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Insights From A Star Scientist's Patent Families: Parents Vs Children Patents, And Academic Vs Commercial Interests

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Insights From A Star Scientist's Patent Families: Parents Vs Children Patents, And Academic Vs Commercial Interests

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Abstract

In this paper we explore an academic entrepreneur's patent portfolio to explore differences in patent breadth and strategy with regards to two conditions: can the patent be deemed an academic patent (versus one with commercial or corporate interests), and whether the patent is a parent or child in a given family. We adapt and adopt several patent breadth metrics from the literature and find mixed support for their ability to be applied equally across academic and commercial patents. Nonetheless, the measures tell an interesting story in that they support an argument that academic patents are broader and follow a pattern of platform parent patents being enhanced in more specific areas by their children patents. Meanwhile, commercial parent patents appear to stake out a narrower initial invention and are followed by children patents that broaden the scope into other areas.

Introduction

In this study we explore the differences between parent patents and their children, and differences in the sources of funding for the research they are based on. In particular, we are interested in exploring factors that may be used to evaluate the breadth or scope of patents within the same research area by the same inventor. While there is conventional wisdom (possibly folklore) around strategies such as 'blocking' or platform patents and 'picket fences', there has been little research on series or families of patents by the same inventor.

Patents are well-known indicators of technological opportunities (e.g., Shane, 2001), which may lead to academic entrepreneurship (Shane, 2004). Patents, particularly broad patents, can grant the assignee 20-year long monopolies to commercialize their idea, and be worth millions or even billions of dollars. Despite their importance, patent research has largely been done at two levels: the patent level, or the firm level. Analysis of a single patent tells us about its characteristics, but omits important detail about how it relates to other patents. This omission is particularly limiting when considering that virtually every idea builds on other ideas, and that many inventors produce several patents (e.g., Markman, Balkin & Baron, 2002 indicates an average of 17 patents per inventor). Analysis of a firm's portfolio of patents tells us about the aggregate characteristics (e.g., Avenel, et al., 2007), but also omits important details of the structure of the portfolio and the relative role of each patent therein.

Thus, in this study we focus our attention on the relative differences of patents by the same inventor. To do so, we first establish which patents are parents or children within the same patent family. Parent patents signify the first departure from prior research, and children patents have direct relations to the parent, and are typically direct extensions thereof. The direct relations are usually in the 'parent case text' section of the patent (*not* the references) and explicitly indicate the genealogical link, including claiming the same priority date as the parent patent (i.e., the chronological genesis of the idea in case of litigation about who had which idea first). Second, we apply several existing and new measures for patent breadth or scope for parents and children within the same family.

By focussing on a single academic entrepreneur, we are also able to capture differences between patent families that are based on basic science (funded via the university or a government agency), and patent families that are more commercially oriented due to commercial assignees with no government funding. The former are assumed to be more

aligned with the university's and government granting agency's *knowledge dissemination* motives, whereas the latter are assumed to be more aligned with *profit* motives. This study explores the patenting strategies of a prolific star scientist (aka academic entrepreneur), Dr Robert Langer in the emerging area of nano-biotechnology ('nanobio'), an areas that is a convergence between nanotechnology and biotechnology and forecasted to be the "third revolution" in biomedical science (Sharp & Langer 2011). Langer has over 1,300 academic publications to his name, and is mentioned as a co-inventor on ~300 granted US patents (more if including non-US patents and applications). His research has been licensed to more than 200 companies¹⁰, and he directly co-founded over two dozen new ventures. Within the evolution of the nano-biotechnology industry (e.g., Maine et al., 2014), we focus on Langer, because his patent portfolio is large enough to compare and contrast patent and patent-family level measures while keeping the inventor and their institutional setting constant. Langer is also known for his '3P' strategy which emphasizes platform technologies (Langer, 2013).

This paper makes several contributions. Methodologically, we make four contributions. First, whereas prior studies comparing academic and corporate patents have created control groups of corporate patents against which to compare the academic sample (e.g. Czarnitzki, Hussinger & Schneider, 2011a; Sampat, Mowery & Ziedonis, 2003; Trajtenberg, Henderson & Jaffe, 1997; Guerzoni et al., 2014), all our patents are by the same individual inventor. We further extend this contribution by identifying families of patents (e.g., in the parent-child sense) and investigate differences between parent and child patents. Second, these studies have employed citation based measures that were not normalized to the same time-period (e.g., Trajtenberg et al., 1997; Hall, Jaffe & Trajtenberg, 2001, 2005), whereas we calculate our citation counts and related measures based on a 5-year window. This avoids a bias in which older patents appear to be better cited and broader. Thirdly, for every Herfindahl Index (HI) based measure, we also calculate an entropy-based measure. Entropy-based measures are less 'bunched' towards zero, and are gaining in interest in research on the diversification of strategies (e.g., Hoskisson et al., 1993) and in scientometrics (e.g., Grupp 1990, Chen & Chang, 2012). Last, but not least, we introduce new diversity measures based on the textual content in the claims.

Our empirical contributions are based on our findings. Using the new measures we introduce and reinterpreting extent measures, the evidence supports an argument that academic patents are broader and follow a pattern of platform parent patents being enhanced in more specific areas by their children patents. In terms of patenting strategy within families of related parent and children patents, commercial parent patents appear to stake out a narrower initial invention and are followed by children patents that broaden the scope into other areas. Without the new measures and reinterpretation, the empirical results (taken at face value) do not make sense.

Collectively, these methodological and empirical contributions enable theoretical contributions regarding the confluence of knowledge domains (RP special issue papers) and the emergence of nano-biotechnology (ref Sharp & Langer, 2011; Maine et al., 2014). More specifically to the comparison of academic vs corporate patents, our analysis enables deeper insight into the differences between academic and commercial technological opportunities. Last, but not least, our analysis reveals different patenting strategies between parents and children, contingent on whether they are academic or corporate patents.

¹⁰ <http://www.bizjournals.com/boston/blog/mass-high-tech/2010/06/robert-langers-reach-touches-new-england.html?page=all>

This paper is structured as follows. In the next section we review the relevant literature related to patent metrics and comparison of academic vs corporate patents, and note an absence of research related to comparison of parent and child patents within families. In the methodology section, we first contextualize our research by reviewing patenting trends of (i) patents in all areas, (ii) patents in the emerging nanobio industry, and (iii) Langer's patent portfolio. We then describe our method of identifying and categorizing Langer's patent families. In our subsequent analysis, we then focus on the differences between Langer's academic and corporate patents and the differences between parent patents and their children. This is followed by a discussion of our findings, implications and conclusions.

Literature Review

Various patent analysis studies have argued that opportunities are greater at the confluence of knowledge domains than in the deepening of an extant knowledge domain. Previous studies have argued that greater knowledge scope is related to an increase in technological opportunities (Shane, 2001, 2004), that broader, more general or more original patents are more valuable (Trajtenberg et al., 1997; Hall et al., 2001, 2005), and that more diverse combinations of knowledge are more valuable (Allison et al., 2004; Harhoff, Scherer & Vopel, 2003).

Methodologically, a popular measure of patent breadth, scope, or diversity is the count of *unique* classes per patent (e.g., Shane, 2001, 2004). This includes the patent's primary patent class, and each unique secondary patent class, each representing a different technological domain the patent is related to (e.g., class 977 represents nanotechnology knowledge). Each primary and secondary classification is also accompanied by a sub-class (e.g., 977's sub-class 734 represents fullerene knowledge). Counts of unique classes are thus limited in that they do not account for the proportion by which the classes are represented or the diversity of sub-classes used.

When comparing academic and corporate patents, research generally indicates that academic patents are broader or more important than commercial patents (Trajtenberg et al., 1997; Czarnitzki et al., 2011; Guerzoni et al., 2014), although the findings are mixed (Sampat et al 2003). The argument, going back to Merton (1973), is that academic researchers are driven more by longer-term intellectual curiosity than shorter-term commercial impact. As such, their research is more *basic*, and thus tends to be broader, which lends itself to platform technologies. Despite this potential, many of these 'homo scientificus' researchers only care about their impact within the scientific community, and feel no incentives to commercialize their research (Strandburg, 2005).

Methodologically, the literature on patent breadth, in relation to academic vs commercial patents has several limitations. First, it draws on patents from different academic inventors, some of whom may be more or less prolific in their areas of expertise. The academic patents are then 'matched' with a random selection of corporate patents that are filed within the same technological area and year. Taken together, this creates a very heterogeneous dataset for which it becomes questionable whether there actually are differences between the diverse academics and the random sample of corporations.

Furthermore, this literature is limited in terms of the selection of variables used and their construction. Recent critiques reveals that there is an over-emphasis on the originality and generality measures introduced by NBER (e.g., Trajtenberg et al., 1997; Hell et al., 2001), and a lack of investigation of other variables (Czarnitzki et al., 2011a, 2011b). Originality is a measure that describes the breadth of technological areas cited by a given patent and is calculated as 1 minus the Herfindahl Index of the primary patent classes of the (backwards)

referenced patents. Generality is a measure that describes the breadth of technological areas which cite a given patent and is calculated as 1 minus the Herfindahl Index of the primary patent classes of the (forward) referencing patents. This dependence on NBER's generality measure is confounded by their own admission that the originality measure "does not live up to expectations" and that they have "some reservation regarding the time span of generality" (Trajtenberg et al., 1997, p. 41-42). Whereas citation rates are often 'normalized' to a 5-year window (e.g, Czarnitzki et al., 2011a, 2011b; Allison et al., 2004), generality measures based on the same citation data are not, and thus favour patents for which more time has lapsed during which the patent can be cited more often and across a wider range of areas.

Entirely absent from the innovation or management literatures (to our knowledge) is a differentiation of parent patents or their children. While there is some research on patent families, prior uses of the term family distort the conventional meaning of the word. While we are interested in patent families and parent-child relationships in the sense of genealogical lineage, other studies refer to patent families as related groups of patents across multiple jurisdictions (e.g., Harhoff et al., 2003; van Beuzekom & Arundel, 2009). In our sense of the word family, a child patent is a direct derivative or extension of its parent, both of which are usually in the same jurisdiction (i.e., we focus on the USPTO patents).

Method

In this section, we list the metrics employed and contextualize our main analysis within the trends observed across all US patents and across all (US) nanobio patents.

Metrics

As this is an exploratory study, we employ multiple metrics of patent breadth and evaluate their merits based on the theoretical arguments and empirical results. Measures are based on data within each patent's record, backward citations and forward citations. Measures based on separate patent records include:

- Counts of claims, where more claims indicates a broader patent (Tong & Frame, 1994; Lanjouw & Schankerman, 2004; Adelman & DeAngelis, 2007)
- Counts of "and" within the first 5 claims, where more 'and's indicate a broader patent because the claims are more inclusive of multiple scenarios (suggested by Langer during the AAAS symposium on "Confluence of Streams of Knowledge: Biotechnology and Nanotechnology" (Maine & Utterback, 2013))
- Counts of "wherein" within the claims (based on counts of and's), where more 'wherein's indicate a narrower patent because the claims are made more specific to exclusive scenarios
- Word count and file size (of the patent's USPTO web page), where higher values indicate narrower patents that include more detail regarding specific examples, formulations and (drug) administration procedures to which the invention is limited
- Counts of inventors as a measure of the human capital applied to each invention, where more inventors indicate a broader patent (Czarnitzki et al., 2011a; Reitzig, 2004)
- Counts of unique classes per patent, where more classes indicates a broader patent (Shane, 2001, 2004; Lerner 1994; Czarnitzki et al., 2011a)
- Counts of all classes, some of which are repeated because they are mentioned in context of different subclasses, where more classes indicates a broader patent
- Diversity of classes: $1-HI = 1 - \sum(p_{\text{unique}}^2)$, where a larger value indicates a broader patent
- Diversity of classes: Entropy = $\sum(p_{\text{unique}} * \ln(1/p_{\text{unique}}))$, where a larger value indicates a broader patent

- Pendency, where patents that take a longer time to get granted are assumed to be based on broader and more complex research (Sempat et al., 2003). We calculate three measures for the time and effort between initial application and patent issue: (i) time from filing date to issue date, (ii) time from priority date to issue date, and (iii) counts of intermediate applications between the application from which the priority date is claimed to the final (granted) application

Measures based on the backward citations include:

- Basicness: % of non-patent references, where a larger proportion of non-patent sources indicates a broader patent (Trajtenberg et al., 1997)
- Originality: 1-HI of the primary classes of referenced patents, where higher values indicate broader patents (Trajtenberg et al., 1997; Hall et al., 2001)
- Originality: entropy of the primary classes of referenced patents, where higher values indicate broader patents

Measures based on the forward citations include:

- 5-yr citations, where higher counts indicate a more important, valuable and broader patent (Czarnitzki et al., 2011a, 2011b; Allison et al 2004; Griliches, 1990)
- Generality: 1-HI of the primary classes of citing patents (limited to those granted within 5 years of the patent's granted date), where higher values indicate broader patents (adapted from Trajtenberg et al., 1997; Hall et al., 2001)
- Generality: entropy of the primary classes of citing patents (limited to those granted within 5 years of the patent's granted date), where higher values indicate broader patents
- Average citation lag (limited to citing patents granted within 5 years of the patent's granted date), where lower values indicate a more important patent that is potentially broader (Czarnitzki et al., 2011a; Sempat et al., 2003)
- Minimum citation lag: the difference between the application date of the earliest citing patent and a given patent's granted date, where lower values indicate a more important patent that is potentially broader (adapted from Czarnitzki et al., 2011a; Sempat et al., 2003)

Empirical Context and Trends

To understand the focal dataset of Langer's patents, we contextualize the development of his patent portfolio within the trends observed in the scope of all US patents (via NBER data) and the scope of all nanobio patents (via the dataset constructed by Maine et al., 2014).

NBER Patent Trends

From the 1963-1999 NBER patent data (Hall et al., 2001), we select every 64th patent (i.e., halving the dataset 6 times, resulting in 345k US patents), to attain a computationally manageable and empirically representative dataset. When plotting the filing dates of (granted) patents over time, we note a massive increase from 1980 onwards. Figure 1 shows the annual patents filed according to NBER, the nanobio dataset (20.3k US patents), and the present focal dataset (i.e., 295 US patents with Langer as an inventor). This era roughly coincides with the emergence of biotechnology and eventually nanotechnology (Maine et al., 2014). Interestingly the annual average value of originality and generality remained constant over the entire dataset (echoed in footnote 10 in Sempat et al., 2003).

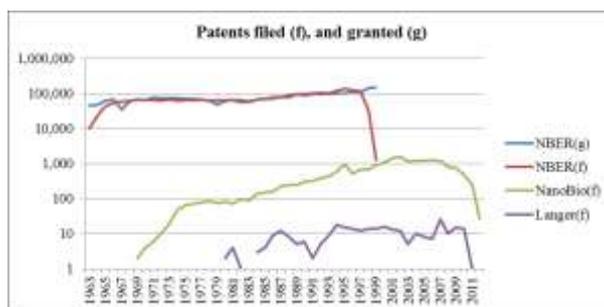


Figure 1: Patents per year across three datasets

Global NanoBio Patent Trends

For each of the 507 nanobio firms identified by Maine et al. (2014) we identify patents as nanotechnology (‘nano’) patents according to keywords (following Mogoutov & Kahane, 2007; Porter, 2008), and identify biotechnology (‘bio’) patents according to International Patent Class (IPC) codes (following van Beuzekom & Arundel, 2009). For multi-national companies (MNCs), only patents that were either bio or nano were analysed. For all other firms, all patents assigned to the firm were analysed. This produced a dataset of 20.3k patents, of which ~13k are bio and/or nano. Had all patents of the MNCs been included, the dataset would have contained ~345k patents. Building on the growth trends in Figure 1, Figure 2 reveals the emergence of bio patents in the late-1980’s, followed by the emergence of nano patents two decades later.

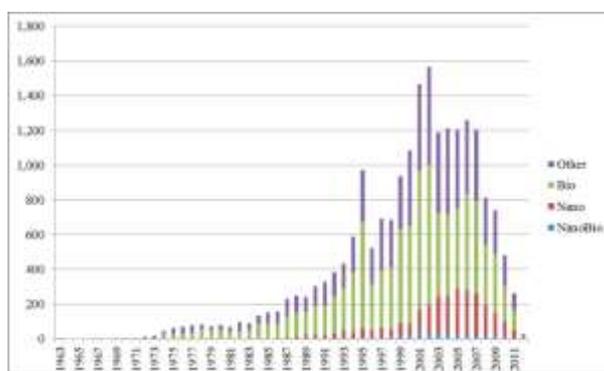


Figure 2: Patents per year in the nanobio industry

The dataset includes patents that are either only-bio (49.2% of the sample), only-nano (12.0% of the sample), bio-and-nano (‘nanobio’, 1.8%) and other (37%). We analyse these types of patents separately regarding their counts of US Classes (‘USC’) per patent, unique USC’s (‘uUSC’) per patent and related diversity metrics (1-HI and entropy). While each measure shows considerable variance, general trends can be seen in scatter plots, as summarized in Table 1.

Patent type	Bio	Nano	NanoBio	Other
US Classes per patent	Avg of 6.1 Stable	Avg of 5.4 Stable	Avg of 6.8 Declining	Avg of 4.7 Stable
Unique US Classes per patent	Avg of 2.2 Stable	Avg of 2.1 Stable	Avg of 2.6 Stable	Avg of 1.8 Stable
1-HI of uUSC per patent	Declining	Stable	Increasing	Declining
Entropy of uUSC per patent	Declining	Stable	Increasing	Declining

Table 1: Patent breadth trends in the nanobio industry

Somewhat unsurprisingly, the USC and uUSC per nanobio patent are highest; nearly 1.5x higher than ‘other’ patents. However, it is interesting to note that the total USC per nanobio patent are declining, while their diversity measures (1-HI and entropy) are increasing.

Langer Patent Portfolio Trends

To create our sample, we analyse all granted USPTO patents that mention Robert Langer (at MIT) as an inventor, resulting in 295 patents (as at January 2014). We augment this data with the Derwent World Patent Index records for these parents from Thomson Innovation¹¹ as well as the Patent Application Information Retrieval (PAIR) data from google patents¹². With over two dozen ventures to his name, one could argue that 5% of the firms in the nanobio industry are directly based on research by Langer. Somewhat similar to the industry average, his 295 US patents were 23% bio, 19% nano, 4% nanobio, and 55% other. Figures 3a-c visualize the pendency in terms of (a) filing date to issue date, (b) priority date to issue date, and (c) the number of intermediate patent applications. These figures show that there is a general trend to file patents, but then modify their content and delay their publication. On the one hand, this shortens the duration of the enforceable life of the patent (i.e., 20 years, starting at the priority date). On the other hand, it allows for new evidence and claims to be brought onto the patent after the core ideas have been submitted, and reserves an earlier priority date from which to claim that one was first to invent.



Figure 3 a-c: Pendency in terms of (a) filing date, (b) priority date and (c) intermediate applications

Figures 4a-e reflect most of the general patterns reflected in Table 1, showing that (a) the count of USCs per patent rose and is declining, (b) the count of uUSCs per patent is slowly declining, and (c) the primary USC is being repeated across increasing proportions of subclass mentions. In lieu of Table 1, and considering that 78% of his patents being ‘bio’ or ‘other’, is also seems unsurprising that the diversity of the USCs used per patent is generally declining (Figures 4d-e).

¹¹ <http://info.thomsoninnovation.com/en/action/ip-research>

¹² <http://www.google.com/googlebooks/uspto-patents-pair.html>

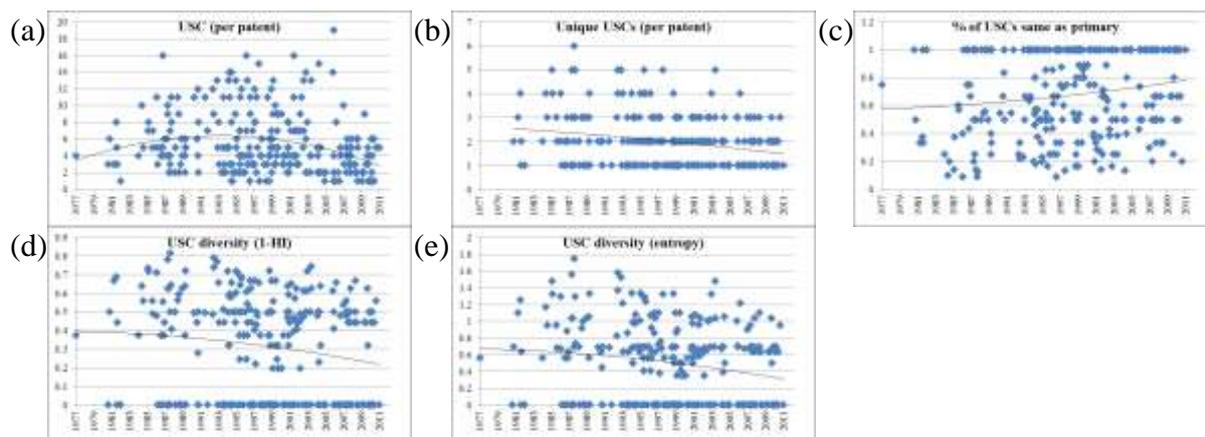


Figure 4 a-e: Use of USCs per patents in terms of (a) USCs, (b) uUSCs, (c) % of USCs that are the same as the primary USC, USC diversity (d-e)

The trends in the counts of references, Figure 5a, clearly indicate the impact of the internet (ca. 1994), and the 2007 inequitable conduct case against McKesson, both of which caused a jump in the number of references per patent. Despite the dramatic rise in the use of references, the originality measures only reflect a gradual increase (Figures 5b-c).

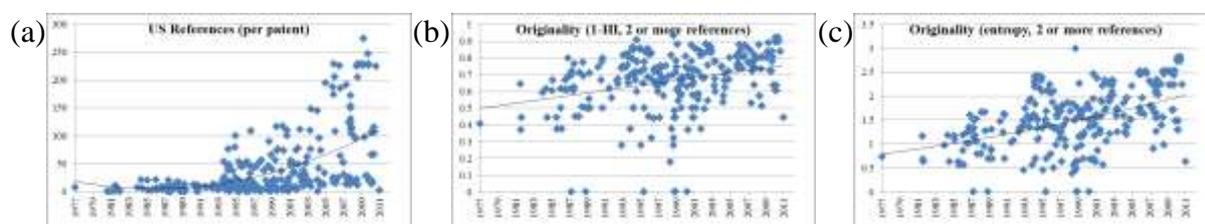
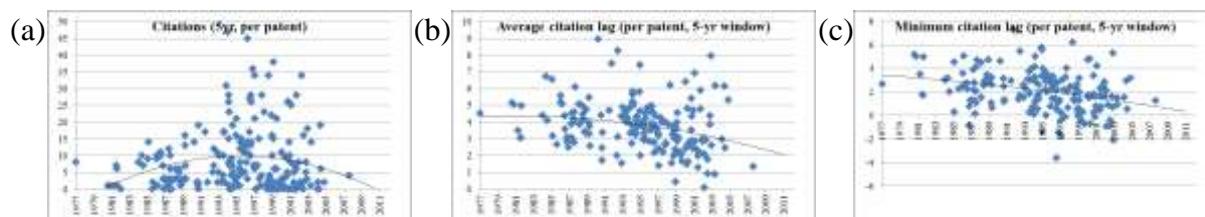


Figure 5 a-c: (a) backward citations, (b) originality (1-HI), (c) originality (entropy)

The trends in Langers forward citations (Figure 6a-e) reveal which patents were more significant (within a 5-year window), how quickly they were cited, and how broadly they were cited. While a 5-year window reduces the bias towards older patents, longer time frames may be required to measure the impact of academic patents. However, research about the relative citations of academic and corporate patents remains mixed. In some cases, “university patents received significantly more first- and second generation citations, and the difference seems to increase over time” (Trajtenberg et al., 1997), while other research finds that citations of academic patents granted after 1983 are lower or delayed in comparison to corporate patents (Sempat et al., 2003). The citation lag measures indicate that the patents are faster to receive citations (Figure 6b), and in some cases even receive citations while they are still applications¹³ (Figure 6c). The generality measures indicate a gradual increase in generality as well as an increase in the number of patents with high specificity (Figures 6d-e).



¹³ For instance 4,863,735 (filed 2 Oct 1986, granted in 5 Sep 1989) is first cited by 4,935,465 (filed 27 Nov 1985, granted 19 Jun 1990)

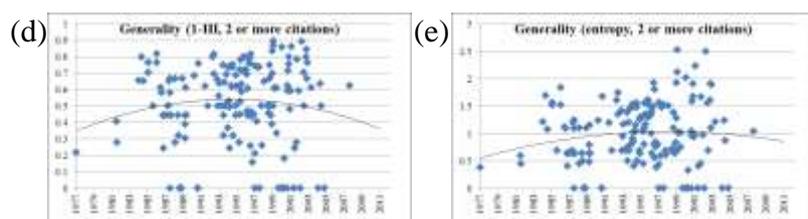


Figure 6 a-e: (a) 5-year citations, (b) average citation lag (filing date to filing date, within 5 years), (c) minimum citation lag, (d) generality (1-HI), and (e) generality (entropy)

Some of the key statistics are summarized in Table 2, where available. The values reveal that patents by nanobio firms tend to have more than 3x the claims and citations of the average NBER patent. Langer’s patents (which may be an indication of the nanobio industry) are nearly twice as original as the average NBER patent and ~50% more general. Perhaps because of the novelty and complexity of nanobio patents, the average pendency is over 50% longer than the average NBER patent. Overall, Langer’s patents seem representative of the global nanobio industry’s, with differences in Langer’s patents being cited 50% more (within 5 years), marginally lower in diversity, and marginally longer in pendency.

Data set (years)	NBER (1963-1999)	Global NanoBio (1963-2011)	Langer (1977-2011)
Patents	2,923,922	20,307	295
Claims	4.76	17.99	22.0
Citations	4.76 (avg as at 1999) n/a (5-yr avg)	14.85 (avg as at Jan 2014) 5.6 (5-yr avg)	41.2 (avg as at Sep 2013) 8.43 (5-yr avg)
Originality	0.350 0.525 (if >0)	n/a	0.637 0.684 (if >0)
Diversity (uUSC)	n/a*	2.07	1.96
Diversity (USC)	n/a*	5.53	5.38
Diversity (1-HI)	n/a*	0.331	0.306
Generality	0.318 0.521 (if >0)	n/a	0.461 0.582 (if >0)
Pendency	“about 2 years” (avg 1.99 in Table 1)	3.19	3.24 (5.76 priority to patent)

* NBER provides only the primary USC class, not the rest

Table 2: Key descriptive statistics of three databases

Langer patent families

We triangulate which patents are related to each other in the parent-child sense by analysing each patent’s (i) Parent Case Text (which is sometimes hidden in the Description section), (ii) Prior Publication Data, and (iii) Related U.S. Patent Documents. We triangulate these data sources with (iv) Parent Continuity Data via USPTO’s PAIR and (v) the Related Applications tables from Derwent. 144/295 patents had one or more intermediate applications, for which the final granted patent was a continuation, continuation-in-part (‘cip’), division, or reissue, or for which the prior (parent) application from which the priority date was claimed was a PCT, Provisional application or other ‘first filing’ document. Each of these sources mentions the intermediate patent application numbers, whether the patents were eventually granted, or not. The average number of intermediate applications was 3.1. These intermediate applications and their interconnections allow us to construct 48 patent families, containing 55

parents¹⁴ and 153 children. The remaining 87 patents are ‘isolates’ that are not directly related to other patents.

In order to differentiate academic from corporate patents, the parent patents are then categorized according to their assignee and “government interests” section. Parent patents were considered academic if they included MIT as an assignee *and* for which the parent patent mentioned a government grant. 28/48 families had parent patents with MIT as an assignee, and 21/48 mentioned a government grant, of which 17/48 met *both* ‘academic’ criteria. Of those, the granting institutions included either the National Institutes of Health (NIH, 14/17 academic families) or the National Science Foundation (NSF, 3/17 academic families). These two criteria were chosen because the relevant policies of MIT^{15,16}, the NIH¹⁷, and NSF¹⁸ all emphasize prompt dissemination of the research findings for the benefit of the public.

Families with parent patents that are neither assigned to MIT nor have a government interest are labelled as ‘commercial,’ in the assumption that the invention is motivated primarily by the profit motive of the assignee. None of the patents with a corporate assignee had any government interests. Overall, this coding results in 17 ‘academic’ families, 15 ‘commercial’ families, and 16 ‘mixed’ families. This distribution conveniently provides a relatively equal distribution of families.

Analysis

To illustrate the evolution of this patent portfolio and its families, we plot the patents and their interconnections in Figure 7, where (i) the x-axis is the filing date of each patent (far left is Jan 1977 and the far right is Jan 2011), (ii) the y-axis is the hierarchical chronological sequence by (a) the filing date of the parent patent of each family and (b) the filing dates of the children patents, (iii) arrows indicate interrelated patents, and (iv) the colour represents the type of family (red = academic, green = commercial, blue = mixed, and black are solo patents). The figure reveals relatively large and small families of all types, with a gradual shift from academic patent families to commercial ones.

¹⁴ Three families had multiple parents (5, 3, and 2) that were usually filed on the same date as co-pending applications.

¹⁵ <http://web.mit.edu/policies/13/13.1.html> “The aim of the Institute's policy on patents, copyrights, and other Intellectual Property is to make available Institute technology to industry and others *for the public benefit*, while providing recognition to individual inventors and encouraging the *prompt and open dissemination* of research results” (emphasis added)

¹⁶ <http://web.mit.edu/tlo/www/community/guide3.html> “In keeping with the traditions of academic science and its basic objectives, it is the policy of M.I.T. that results of scientific research are to be promptly and openly made available to others.”

¹⁷ <https://publicaccess.nih.gov/faq.htm#753> “The Director of the National Institutes of Health shall require that all investigators funded by the NIH submit or have submitted for them to the National Library of Medicine’s PubMed Central an electronic version of their final peer-reviewed manuscripts upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication”

¹⁸ http://www.nsf.gov/pubs/manuals/gpm05_131/gpm7.jsp#740 “NSF advocates and encourages open scientific and engineering communication. NSF expects significant findings from research it supports to be promptly submitted for publication, with authorship that accurately reflects the contributions of those involved.”

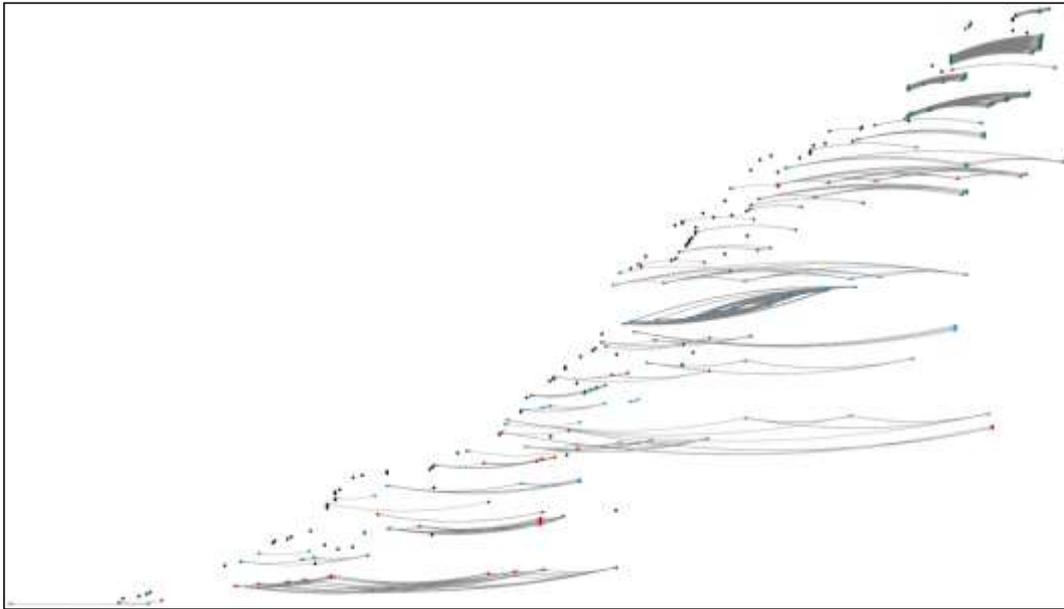


Figure 7: Evolution of the patent families in Langer's US patent portfolio

Academic versus Commercial Parent Patents

To analyse our data, we compare the differences between (i) academic and commercial parent patents, and (ii) parent patents and their children. Table 3 summarizes the differences between the parent patents of the academic and commercial patent families, and Table 4 focuses on the difference between parents and children patents. Due to the low counts of families, the comparison only lends itself to qualitative comparison, and not statistical t-tests.

Measure	Academic parent patents	Commercial parent patents	Δ Commercial vs Academic
Claims	18.7	29.1	56% ↑
And's (first 5 claims)	8.3	3.3	60% ↓
Wherein's (first 5 claims)	4.3	4.1	5% ↓
Wherein's	15.9	21.5	35% ↑
Words	10,346	17,500	69% ↑
File size	86,797	136,885	58% ↑
Inventors	3.8	5.33	39% ↑
Unique USC's (uUSC)	2.4	1.9	19% ↓
USC's	5.8	4.2	26% ↓
uUSC diversity (1-HI)	0.368	0.335	9% ↓
uUSC diversity (entropy)	0.641	0.515	20% ↓
Unique IPC's	2.2	2.3	1% ↑
References (patents)	30.1	47.2	57% ↑
References (all)	71.5	97.2	36% ↑
Basicness	0.44	0.35	22% ↓
Originality	0.537	0.650	21% ↑
5yr Citations	6.9	18.9	175% ↑
Citation lag (min.)	3.0	1.6	47% ↓
Citation lag (avg.)	4.5	3.7	19% ↓
Generality	0.567	0.590	4% ↑
Pendency (filing)	3.6	3.5	3% ↓
Pendency (priority)	4.1	4.0	3% ↓
Related applications	0.5	1.1	126% ↑

Table 3: Patent breadth measures of academic vs commercial parent patents

These measures show an interesting mix of supporting and conflicting evidence in comparison to prior research on academic patenting (using control group patents of independent corporations). Any one measure does not conclusively define breadth, and the differences should be interpreted with some caution. For instance, commercial patents have 56% more claims than academic patents, indicating that they are broader (as per Lanjouw & Schankerman, 2004, but cf. Adelman & Deanglis, 2007). However, the counts of ‘and’s in the first 5 claims and the number of wherein’s across all claims indicates that claims in academic patents are broader than the claims in commercial patents. Similarly, the number of words and the file size (in USPTO’s database) both indicate that commercial patents are more verbose, and thus more likely to include more specific (and possibly exclusive) illustrative examples to which invention applies, more specific and thus more limiting details on the formulation of the biochemical compound or material, and its administration in patients.

Interestingly, regarding the number of inventors (and their collective knowledge) as indicators of patent breadth, we find exactly the opposite pattern to Czarnitzki et al. (2011a). While they observed an average of 3.4 inventors per academic patent and only 2.7 inventors per corporate patent, we observe roughly the same (3.8) inventors per academic patent, but nearly twice as many inventors on commercial patents. In our interpretation, academic patents are tied more closely to the basic research on which they are based. In that case, the co-inventors (or co-authors on related publications) may wish to be more exclusive about which individual(s) the invention is attributed to. In contrast, commercial patents tend to be assigned to an incorporated entity, the firm. Should any inventor cease their association with the firm, it is its best interest to remove key-stakeholder risks by having as many inventors as possible remain familiar with each invention.

The more conventional patent breadth measures based on USCs (and IPCs) echo arguments that academic patents are more inclusive of more knowledge areas than commercial patents (Shane, 2001; Lerner, 1994; Czarnitzki et al., 2011a). Whereas prior research using IPCs only revealed marginal differences, as also found here, the differences in the USC based measures is remarkable, with commercial patents being ~20% less broad than academic ones. The next three measures in Table 3 about references and basicness reflect a conjecture made in Trajtenberg et al. (1997, p. 41) that academic patents are “located nearer the origins of innovational paths” and thus have fewer patented ideas to rely on. Perhaps because academic patents draw on fewer patents (in absolute and relative terms), their originality measures are lower than expected. While such a rationale was not offered by Trajtenberg et al. (1997), they noted that the originality measure “does not live up to expectations” (p. 41) in distinguishing academic and commercial patents.

The values for all the citation-based measures are opposite to expectations and require reinterpretation. While prior studies showed that academic patents receive more citations faster (Trajtenberg et al., 1997) or have the same citation lags as commercial patents (Czarnitzki et al., 2011), other research shows that academic patents are slower to receive citations, and that their 10-year (or more) citations are a better indicator of their real value and breadth (Sempat et al., 2003). We observe nearly three times more citations for commercial patents than for academic ones (18.9 vs. 6.9) and echo this interpretation, by proposing that because academic patents are more basic, they take longer to be translated into commercial practice, and thus operate in a slower moving patent field. Once the invention is ready to move from the lab bench to full scale production, then we can expect greater volumes of patents that (incrementally) build on the academic ones. That said, it is interesting to observe that the generality of both types of patents is quite similar (0.567 vs 0.590), despite

commercial parent patents' generality measure drawing on nearly three times as many citations.

Lastly, the pendency related measures indicate that academic (parent) patents take approximately the same amount of time (cf. Sempat et al., 2003), and that they have fewer intermediate applications. The latter point could be a nod to the expertise MIT's UILO has developed in filing patents such that they do not need to be revised and re-applied as continuations, cip's or divisionals. Overall, there is rationale for the differences in the values in Table 3, upon which one can argue that academic patents are broader in terms of knowledge domains and future applications, but that their (relative) impact is not visible within a 5 year time frame.

Children versus Parent Patents

We now turn our attention to differences between parent and children patents. Rather than repeat the values for the parent patents from Table 3, our Table 4 shows only the average values of the children and the difference (Δ) relative to their parent(s). As an indicator of the consistency of each difference, Table 4 also shows the percentage of families for which their Δ was positive or negative (not equal; omitted for space), with values over 50% marked in italics.

Measure	Academic children	Δ	+ve Fam.	-ve Fam.	Commercial children	Δ	+ve Fam.	-ve Fam.
Claims	19.9	6%	<i>53%</i>	41%	24.0	-18%	38%	<i>56%</i>
And's (first 5 claims)	5.7	-32%	41%	47%	4.2	27%	<i>56%</i>	19%
Wherein's (first 5 claims)	4.7	10%	41%	24%	3.6	-11%	38%	38%
Wherein's	19.0	19%	<i>59%</i>	35%	18.7	-13%	31%	<i>63%</i>
Words	11,747	14%	<i>88%</i>	12%	19,459	11%	<i>75%</i>	25%
File size	98,219	13%	<i>82%</i>	18%	155,340	13%	<i>75%</i>	25%
Inventors	3.8	-1%	12%	24%	5.29	-1%	6%	6%
Unique USC's (uUSC)	2.1	-14%	29%	47%	1.7	-11%	25%	50%
USC's	5.2	-11%	18%	47%	3.5	-17%	25%	50%
uUSC diversity (1-HI)	0.336	-9%	29%	47%	0.281	-16%	31%	50%
uUSC diversity (entropy)	0.549	-14%	29%	47%	0.423	-18%	31%	50%
Unique IPC's	2.0	-12%	12%	29%	2.1	-9%	38%	38%
References (patents)	32.8	9%	<i>59%</i>	24%	66.1	40%	<i>75%</i>	13%
References (all)	92.5	29%	<i>71%</i>	29%	127.4	31%	<i>88%</i>	6%
Basicness	0.44	-2%	47%	47%	0.36	3%	19%	<i>81%</i>
Originality	0.546	2%	47%	41%	0.712	10%	50%	38%
5yr Citations	6.9	0%	27%	<i>67%</i>	11.4	-40%	0%	<i>100%</i>
Citation lag (min.)	2.6	-14%	45%	<i>55%</i>	1.4	-13%	38%	<i>63%</i>
Citation lag (avg.)	4.5	0%	45%	<i>55%</i>	2.9	-20%	25%	<i>75%</i>
Generality	0.465	-18%	27%	<i>73%</i>	0.548	-7%	13%	<i>88%</i>
Pendency (filing)	3.4	-7%	35%	<i>65%</i>	3.0	-14%	31%	<i>69%</i>
Pendency (priority)	7.3	78%	<i>82%</i>	18%	6.3	58%	<i>100%</i>	0%
Related applications	2.0	332%	<i>100%</i>	0%	3.5	227%	<i>100%</i>	0%

Table 4: Patent breadth measures of academic and commercial children patents vs their parents

The patterns in Table 4 tell a story of patenting strategies around the core inventions contained in the parent patents. While the differences (Δ) alone provide an interesting story, we also find differences in the direction of the Δ -values across family type of particular interest. For example, academic children patents tend to have (6%) more claims than their

parents, whereas commercial children patents tend to have (18%) fewer claims than their parents. Vice-versa, academic children patents have (32%) fewer 'and's, and (19%) more wherein's, whereas commercial children patents have (27%) more 'and's, and (13%) fewer wherein's. Taken together, academic families appear to start off with a very broad parent patent, followed by increasingly specific children patents, thus resembling a blocking patent and picket fence strategy. In comparison, commercial families appear to take a more organic approach, wherein a relatively narrow patent is followed by children who broaden its scope. This approach may be driven by the business development plan for the firm as it enters adjacent markets by adapting its core technology.

The differences regarding the number of words and file size indicate a general upward trend that may be more of an artefact of the general patenting trends (incl. increasingly more references that need to be taken into account) for all patents, and less of an artefact of a specific patenting strategy. The differences of USC-based measures show relatively similar patterns for both types of families: the children patents are narrower in terms of technological areas. Nonetheless, academic children patents remain broader than their commercial counterparts, indicating that they are still not designed for a limited range of commercial applications for which a (licensee) firm is willing to litigate against competitors.

The next noticeable pattern is in the differences in references. If, as inferred above, academic patents are in slower moving fields, then their children may only pick up a handful more relevant parents. In contrast, commercial children patents may need to reference an onslaught of new patents in the same area by competitors, hence their 40% increase in references relative to their parents, which then also drives their 10% increase in originality.

The relatively low 5-year citations of academic parents and children support the conjecture that academic patents are in slower moving technological areas than commercial patents. For either type of patent family the children are cited quicker than their parents, which may be a factor of their parents already being monitored by other labs or firms in the technological area. The drop in generality of children patents echo that once a core (or platform) invention has been patented, subsequent children only become more focussed. However, children in the same family may individually cover different areas so that they collectively cover a broader range of areas than their parent.

Lastly, the pendency measures reveal that children patents are generally faster to get granted than their parents. With this in mind, it is interesting to see that children in academic patent families have ~1 year longer pendency with respect to priority date than commercial children. This suggests that (i) academic patent families are slower to evolve if more time elapses between the filing dates of parents and children, and (ii) for academic patents it may be more important to claim the earliest possible priority date than to have the longest period possible over which one can litigate the patent. In terms of intermediate applications, by definition of children being derivatives of parent applications one expects an increase by at least 1. The average increase in intermediate applications of academic children patents is 1.5, in comparison to an impressive 2.4 for commercial children patents. This increase is impressive because all the intermediate applications occur within a pendency period that is shorter than their academic counterparts.

Overall, the measures that tell the most interesting story about patenting strategy are perhaps (i) the ones based on the claims and their content, followed by (ii) the counts of references and originality, and (iii) the counts of intermediate applications. As above, the 5-year generality measures and associated generality measures may be more reflective of the

patenting velocity in areas of academic or commercial inventions, and not a good indicator of breadth or longer-term value.

Findings

Our analysis indicates that there are mixed indicators of patent breadth for academic patents. Since they reference fewer patents, their originality measures may under-estimate their true originality. Likewise, since they receive fewer citations (within 5 years), their generality measures may under-estimate their longer term generality. As a result, we also warn against an over-emphasis on these metrics (along with Czarnitzki et al., 2011a, 2011b). Instead of the originality measure, our analysis suggests that using the USC data for each patent may more accurately reflect the technological breadth of each patent. Likewise, instead of the (time dependent) generality measure (or citations), the counts of ‘and’s and ‘wherein’s in the claims may more accurately reflect the (time independent) breadth of the practical applications. These alternative measures, along with the relative brevity of academic patents indicate that they are broader than commercial patents.

From our analysis of children patents relative to their parents, we find that academic children use more exclusionary language (fewer ‘and’s and more ‘wherein’s) and only marginally extend the technological knowledge base of their parents. This suggests a strategy, in which specific extensions of the patent are claimed and protected before a competitor can do the same to ‘fence’ them in with a picket-fence strategy. In contrast, the commercial children indicate more of an organic or evolutionary pattern, in which the children tend to have fewer claims, with comparatively more inclusive language (more ‘and’s and fewer ‘wherein’s) than their parents.

Implications

This study has implications regarding the use of patent metrics and their interpretation. Additionally, each measure tells a different and incomplete story. Relying on only one measure (e.g., 5-year citations) may only work when comparing patents that are the same type (academic or commercial) and filed or granted within similar periods. For inventors and their supporting technology transfer offices or patent agents, this study offers insights into how to initiate a research and development program in an area such that initial (parent) patents can get issued early and then extended by their children.

Conclusions

By using a suite of patent metrics, we were able to identify differences in patent breadth and patenting strategy across academic and commercial patents of the same star scientist (aka academic entrepreneur). We caution against the use of any one measure on its own and find that their combination reveals supporting evidence for an argument that (i) academic patents are broader and (ii) that follow a pattern of platform parent patents being enhanced in more specific areas by their children patents. We also find supporting evidence that (iii) commercial parent patents are initially relatively narrow and (iv) are followed by children patents that broaden the scope into other areas.

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“Geographical Co-location and Trade Association Effects on Firm’s International Performance: Evidence from South American Emerging Economies”

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ABSTRACT

In this article we investigate the effects of geographical co-location and the company’s engagement with a trade association on the firm’s international intensity. Our underlying research questions include: a) Should emerging economies foster geographical co-location by means of public policy when aiming at an improvement of the firm’s international intensity? b) Should Latin American emerging economies promote the role of trade associations to strengthen the international intensity of firms? We argue that a geographical co-location public policy incentive together with a trade association promotion effort will be desirable if these policies increase firms’ international intensity. Our unique contribution is to provide a theoretical framework that explains how geographical co-location and engagement with a trade association impacts international intensity while measuring empirically the effects of such impacts. Moreover, no empirical study on the influence of co-location and trade associations on the firm’s international intensity has been carried out in Latin American emerging economies, where government institutions are weaker than in developed countries, suggesting that local trade associations could fill the vacuum left by governments that are less proactive in providing better access to resources required for internationalization.

Introduction

In a global environment characterized by increasing technological change and lower trade barriers, countries have developed a strong interest to promote their exports (Freeman, Styles & Lawley, 2011). In this paper we investigate the effects of geographical co-location and the company’s engagement with a trade association on the firm’s international performance. We capture international performance by measuring international intensity, which is the percentage of total sales in the firm derived from international markets (Fernhaber, Gilbert & Mcdougall, 2008).

The behavior of expanding internationally is reinforced in businesses by the fact that exporting firms are more productive than the firms that only focus in local markets (López, 2005) and that international performance has shown to have a positive impact on the value of firms (Doukas & Lang, 2003; Delios & Beamish, 1999).

If we consider the convenience of implementing a geographical co-location strategy on a country level or the promotion of trade associations within a certain industry, we must ponder that social welfare is maximized when all firms in the market maximize their own value given no market imperfections (Stiglitz, 1991). In this context, the best possible outcome for society will be to engage in the promotion of geographical co-location and the role of trade associations only if they have a positive impact on firm’s long run value.

Given that international performance has a positive impact on the value of firms by increasing their capabilities (Sapienza et al., 2006) as well as reducing their risk and increasing their probability of survival (Tallman & Li, 1996), establishing the effect of geographical co-location and trade associations on international performance will bring a unique contribution to the theory and will allow emerging economies to make business oriented public policy decisions that increase the long run value of firms based on empirical evidence.

While co-location refers to geographical agglomeration, or how close firms that produce the same goods or services are located in relation to each other, a cluster is defined as “a geographically

proximate group of interconnected companies and related institutions in a specific market, linked by interdependences in providing a related set of products and/or services”. (Porter, 2000, p. 254).

Previous empirical studies have focused on measuring the impact of co-location and clustering on multiple outcomes. Delgado, Porter & Stern (2010), Rosenthal & Strange (2003) and Rocha & Sternberg (2005) analyze such effects on start-ups and start-up employment. Their results show that geographical co-location as well as clustering have a positive impact on the development of new start-ups, as well as start-up employment. Fernhaber, Gilbert & McDougall (2008) consider the impact of geographic location on International Intensity and International Scope in new ventures. Their findings indicate that international scope and international intensity increase as geographical co-location increases, but just to a point where competition neutralizes the positive effects of co-location turning them into negative effects. Gabe (2005) studies the repercussion on investments in machinery and equipment finding a modest effect of co-location on investment. Bell (2005) and Bunker, Owen-Smith & Powell, (2009) examine the influence on innovation. They find a positive effect of co-location on innovation. Kukalis (2010) investigates the impact of co-location on financial performance finding no evidence of a positive effect, while Wennberg & Lindqvist (2010) find that firms located in clusters pay higher taxes, higher wages and create more jobs. In a similar study, Boasson, Boasson, MacPherson & Shin (2005) considered the impact of co-location on firm value. Their results show that co-location has a positive impact on the market value of the firm.

None of these studies, however, have considered the effects of both trade associations and co-location on international performance. There is not enough literature on the impact that trade associations have on international performance when geographical co-location is controlled for. This issue is relevant because it would allow public policy makers to design better strategies and achieve a higher international competitiveness level if results show that firms can develop a higher international performance when co-located or more engaged with a trade association. This study will also contribute to company managers, who could co-locate and increase participation and engagement in trade associations if these activities are shown to be linked to higher results in international performance.

This study’s unique contribution is to provide a theoretical framework that explains how geographical co-location and the level of engagement with a trade association impact the international performance of the firm while measuring empirically the effects of such impacts.

In the first section of this paper we review the existing literature on co-location and clusters portraying their associated externalities and impact on firm performance. In the second section we explain the role and contributions of trade associations to the firm’s performance and potential contributions to international performance. By the end of this section we introduce our hypotheses. In the third section, data and methodology for the analysis are discussed. In the fourth and final section, results are conveyed and the conclusions and major contributions of this study are outlined.

I. Theoretical Framework

As firms agglomerate, some externalities that only exist when firms are closely placed together come to play a role affecting firms both positively and negatively.

On one hand industrial areas accommodate their industries by expanding the resources required by the firms and this effort supports a higher productivity (Niosi & Bass, 2001; Maskel & Malmberg, 1999; Porter, 1998) but simultaneously, as the number of industries co-located rises, competition reduces the profit margins of corporations (Arthur, 1990). The final outcome (wether the effect of clustering is positive or negative on firm performance) will depend on the specifics

of the industry, as well as regional, and country factors (Kukalis, 2010; Felzensztein, Gimmon & Aqueveque, 2012a; Felzensztein, Gimmon & Carter, 2010b; Felzensztein & Deans, 2013).

The first scholar pointing out the relationship between spatial propinquity and production is Von Thunen (1826), who deliberated on size of demand, availability of labor, cost of transport, and dependency on other producers as factors that triggered industry agglomeration. His work aimed mostly at finding determinants in the agglomeration decision of industries when choices were between cities or rural areas. Weber (1909) also considered transfer costs as decisive in the location outcome of industries. Isard (1949) and Harris (1954) stretched the importance of availability of raw materials on the location decision.

Marshall (1920) made a substantial contribution with his theory of industrial agglomeration by indicating three fundamental reasons (externalities) why firms co-located,

- Industries place themselves close to customers and suppliers in order to minimize transfer costs of inputs and finished products.
 - Industries locate closely in order to develop labor market pooling.
 - Industries cluster to escalate the learning process of workers. (Knowledge Spillovers).
- This triad actually suggests two types of positive effects, increase in productivity and increase of demand. Recently, Ellison, Glaeser & Kerr (2010) have confirmed the three propositions of Marshall using data from the US Census Bureau's Census of Manufacturing. Their results reinforce the idea that firms account for the transportation cost of three different and essential resources: people, inputs or products, and ideas.

In a similar fashion Krugman (1991a) identifies four agglomeration forces: technological spillovers, labor market pooling, non-traded inputs and positive market linkages. The first three are considered technological externalities while the latter as a pecuniary externality, being mediated by markets. Natural advantage accounts for a huge part of industrial agglomeration as well, Ellison & Glaeser (1999) contend that firms will locate in areas where they will have natural cost advantages. Their estimation is that twenty percent of geographic industrial concentration is a direct response to this determinant.

Clusters are distinct from mere agglomeration in the sense that networks have an important part in the system. (Kukalis, 2010). Agglomeration implies proximity only. Nevertheless, researchers approaching data from an agglomeration perspective are really measuring partially the effects of networks as well. This comes as a result of the interaction between propinquity and network development. (Felzensztein et al, 2014; Felzensztein & Parra, 2014; Audretsch & Feldman, 1996).

We ask ourselves the following question: If co-location and clustering exert an impact on firm performance through a different set of externalities, wouldn't those externalities affect the firm's international performance as well? We start by taking a close look at the externalities that arise from co-location and clusterization.

Externalities within co-located and clustered firms:

The idea that the set of externalities arise in clusters and develop economies of scale is tested by Knarvik & Steen (1999) in the Norwegian maritime industry. Their conclusion underpins the concept of economies of scale present in industrial agglomerations. Rosenthal & Strange (2003) ask themselves a similar question and show that localization economies do exist, though attenuate quickly over a few miles.

Some of the positive externalities that the literature has identified within clusters are: marketing externalities (Felzensztein, 2008; Felzensztein, Gimmon & Carter, 2010b ; Felzensztein, Huemer & Gimmon, 2010a), capacity to gather external capital (Folta et al, 2006), increments in the

productivity of workers (Ciccone & Hall, 1996), more efficient collaboration (Saxenian, 1994), higher innovation (Harrison et al, 1996), decreasing costs (Jaffe, Trajtenberg & Henderson, 1993), knowledge spillovers (Marshall, 1920; Alcácer & Chung, 2007), infrastructure and Technology sharing (Granovetter, 1985), and competitiveness through better resource appropriation and cooperation (Porter, 1998). Therefore, there is enough evidence in literature to infer that the presence of these externalities will have a positive and significant effect on the firm's international performance. This is because many of these previously mentioned externalities increase the overall capabilities of the firm, which is of essence when expanding into international markets (Sapienza et al., 2006).

In detailing some empirical studies focused on agglomeration and co-location externalities it is relevant to mention the data source used by researchers. Differences in results could be explained by approaching different industry sectors (Kukalis, 2010) or different regions and countries (Felzensztein, Gimmon & Carter, 2010b ; Felzensztein, Huemer & Gimmon, 2010a; Felzensztein, Gimmon & Aqueveque 2012b)

In this section we should mention Driffield & Munday (2000), who examine data from the United Kingdom and show that industry agglomeration influences industry's competitive advantage. Rocha & Sternberg (2005) study entrepreneurship in Germany at the regional level and find a positive impact of clusters on entrepreneurship. This finding suggests that in areas of higher agglomeration, entry barriers are lower than in areas of lower firm density providing for generation of higher social welfare. Start-up employment is also enhanced by cluster activity, as well as entrepreneurship activity according to Delgado, Porter & Stern (2010), who study the Longitudinal Business Database of the Census Bureau from the US, reporting that clustered firms may look for complimentary regional clusters to locate in and expand.

One interesting externality to consider is the impact of co-location on innovation. Bell (2005) models the innovation of Canadian mutual fund companies and finds that clustering and network centrality in the managerial network increases firm innovation. Bunker, Owen-Smith & Powell (2009) analyze the bio-technology sector and conclude that co-location and social networks have independent and contingent effects on innovation. Their affirmation that location is a dimensional concept that could well be applied to the geographic and the network dimensions as determinants of organizational outcomes is an important component of our study. The main objective of our paper is to determine the effects of these two dimensions (geography and institutional social networks represented by trade associations) on one specific corporate outcome: Firm's International Performance (measured as percentage of total sales derived from exports).

We conclude that Knowledge Spillovers, Labor Market Pooling, Marketing Externalities, Tighter Ties and Collaboration, Innovation, Infrastructure Sharing, and Decreasing Costs, are some of the externalities that impact financial firm performance positively and negatively depending on the level of agglomeration. But as these externalities impact the firm's competitiveness level they also influence the firm's international performance. This study measures the net effect of these externalities on the firm's international performance in the Latin American emerging economies and in several industries. If positive externalities surpass the competition effect that agglomeration creates after a certain point, the influence on firm's international intensity will be positive. Otherwise the effect will be either neutral or negative.

It's important to consider that Latin American economies provide a very different business environment than developed economies (where all the analysis previously mentioned have been conducted). We claim that the difference in institutional levels between emerging and developed economies will strengthen the force of the mentioned co-location externalities in emerging economies, therefore showing a positive effect of being co-located.

II. Trade Associations and Firm Performance.

One of the primary means of collective work for firms are Trade Associations (also known as Business Associations or Chambers of Commerce). Trade Associations can function at an international level, national level or local level. On them, Porter (1998 pp.88) adds: "Trade Associations can provide a forum for the exchange of ideas and a focal point for collective action. Associations can take the lead in such activities". We ask ourselves: What is the effect of Trade Associations on firm international performance? The result to this question is not obvious; Porter (1998 pp.89) indicates that Trade Associations might have a narrow coverage. Clusters comprise many industries and Trade Associations are typically composed of one industry.

Using a database of 63 shoe producing firms, Rabelotti (1999) shows using OLS that there is a positive and significant correlation between firm performance and increase horizontal cooperation through a Trade Association in the Guadalajara shoe cluster. The performance indicator is built through principal component analysis and includes: sales, profits, exports, average price, average delivery time, product quality, and number of employees). On a different study, Knorringa (1999) uses a survey of 60 shoe producing firms from the Agra Indian cluster, and shows that strong performers have much more often increased their participation in trade associations. Also, on data from 65 shoe producing firms from Brazil, Schmitz (1999) found that firms with strong overall performance in terms of annual sales were more likely to have increased their cooperation through a business association.

The previous results, obtained with data extracted from emerging economies, indicate a relationship between trade association, co-location and firm performance. But in order to understand the internationalization process of firms, we must also study the impact of the level of engagement with trade associations and co-location on firm's international performance. Our study targets this specific gap in the literature.

We argue that because of the low levels of institutional development in some of the Latin American emerging economies, Trade Associations replace the role of government in providing a pathway for collaboration and acquisition of multiple public goods (such as shared infrastructure, technology and research & development) that should be available to firms if their countries had better institutional development

Based on the previous literature our hypothesis are the following:

H1: The higher the geographical co-location the higher the firm's international intensity.

We have presented several studies from the cluster and agglomeration literature that explain the different externalities present when firms co-locate. These externalities influence the firm's performance and should have an impact on firm's international intensity as well. For instance, while innovation grows with co-location (Bell, 2005), the firm's international competitiveness level should increase also making the company more attractive in foreign markets.

H2: The higher the engagement with a Trade Association, the higher the firm's international intensity.

Relationships are essential in internationalization and they are generally a result of personal contacts, business contacts or previous networks (Freeman, Edwards & Schroder, 2006). Local trade associations are a formal network constantly providing new sources for contacts and relationship building.

The internationalization process also demands, among other things, the recognition of opportunities (Fernhaber, Gilbert & McDougall, 2008). Trade associations are spaces where

business experiences are shared and new social networks are formed. This suggests that firms with a higher degree of involvement with their local trade association will benefit from a higher speed in recognizing opportunity.

II. Data & Methodology

In order to test our hypothesis we used the data from the 8th Survey of Innovation from the Institute of Statistics from Chile (2013) and the National Innovation Survey in the Manufacturing Sector from the National Institute of Statistics and Information from Peru (2012). Surveys were independently conducted by the referred government institutions in each country and are available online.

The models tested with each survey were not identical though quite similar; this was due to the characteristics of each survey. In the case of Peru, the model did not allow for measurement of co-location and only trade association engagement was measured. In the case of Chile both trade association engagement and co-location effects on international intensity were measured. Also multiple industry sectors were used as control variables in the case of Chile.

For both Chile and Peru coefficients were obtained by OLS and by GLM with a logit transformation, which was calculated in Stata with family (binomial) link (logit) and robust as proposed by Papke and Woolridge (1996). We kept only exporters in our estimation.

In order to measure the level of engagement with a trade association we used a question present at both surveys (Chile & Peru) as a proxy of engagement with a trade association. The question asks: “Were trade associations and professional associations an important source of information for innovation development in the firm?”. Firms answered “Very Important”, “Important”, “Less Important” and “Not Relevant”. We therefore assume that firms that obtain more information that is important for innovation development are more engaged with their trade association.

The model estimated in Chile included the following variables:

Dependent Variable: International Intensity (Total Exports 2012 divided by Total Sales 2012)

Independent variables:

a)Location Quotient: The co-location degree variable was constructed as a regional location quotient in the following manner:

$$LQ = \frac{e_i/e}{E_i/E}$$

e_i = Local employment in industry i

e = Total local employment

E_i = Country area employment in industry i

E = Country total employment

b)TA1: High level of engagement with trade association, c)TA2: Medium level of engagement with trade association, d)TA3: Low level of engagement with trade association e)TA4: No engagement with trade association, f) Firm Age, g)Firm Age squared, h)P021: The firm is part of a group of firms, i)P3000: The firm introduced new or improved goods in the period, j)P3251: The firm introduced new relationships such as alliances with other firms or government corporations, k)P3260: The firm introduced new promotion techniques, l)P3235: The firm introduced a new manufacturing method, m)P224: Total number of workers 2011,

n)P3237: The firm introduced a new supply chain or distribution method, o)P3239: The firm introduced new software to support purchase or accounting or information management, p)P3247: The firm introduced process innovation, q)P3249: Firm introduced new organizational method, r)P3264: Firm introduced new pricing method, s)P3054: Firm conducts research and development in the company, t)Sectors (Sec=Agriculture and Livestock, Sec2=Fishing, Sec3=Mining, Sec4=Manufacturing, Sec7=Commerce, Sec8=Hotels, Sec9=Transport, Sec10=Finance).

The model estimated in Peru included the following variables:

Dependent Variable: International Intensity (Total Exports 2011 divided by Total Sales 2011)

Independent variables:

a)TA1: High level of engagement with trade association, b)TA2: Medium level of engagement with trade association, c)TA3: Low level of engagement with trade association d)TA4: No engagement with trade association, e) Firm Age, f)Firm Age squared, g)P3_1_1: Firm conducts research and development in the company, h)P3_1_2: Firm acquires R&D externally, i)P3_1_9: Firm performed market studies to introduce innovations, j) P5_1_13_2011: Total workers 2011, k) P6_1_1_1: Firm introduced a new product, l)P6_1_1_2: Firm introduced new service, m)P6_1_1_3: Firm introduced an improved product, n) P6_1_1_5: Firm introduced a new process, o) P6_1_1_6: Firm introduce dan improved process, p) P6_2_2_1: Firm introduced new business practices, q) P6_2_2_2: Firm introduces new organizational methods, r)P6_2_2_3: The firm introduced new relationships such as alliances with other firms or government corporations, s) P6_2_2_4: Firm introduced new design or packaging, t)P6_2_2_5: The firm introduced new promotion techniques, u)P6_2_2_6: Firm introduced new distribution channels, v)P6_2_2_7: Firm introduced new pricing method

III.Results

Table 1: OLS Chile.

intensity	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
loc_quo	-0,0173754	0,0119483	-1,45	0,146	-0,0408013	0,0060505
TA1	0,2064942	0,0293646	7,03	0	0,1489221	0,2640664
TA2	0,1365174	0,0265566	5,14	0	0,0844506	0,1885841
TA3	-0,1264431	0,0182097	-6,94	0	-0,1621449	-0,0907413
Age	-0,0020407	0,0006222	-3,28	0,001	-0,0032607	-0,0008208
Age2	4,05E-06	2,44E-06	1,66	0,096	-7,24E-07	8,83E-06
P021	0,0314797	0,0183693	1,71	0,087	-0,0045352	0,0674945
P3000	-0,197674	0,0212729	-9,29	0	-0,2393815	-0,1559665
P3251	0,098851	0,0235382	3,9	0	0,0491338	0,1485682
P3260	-0,1568515	0,0221817	-7,07	0	-0,2003408	-0,1133622
P3235	0,0240976	0,0217417	1,11	0,268	-0,018529	0,0667243
P224	-1,21E-06	0,0000223	-0,05	0,957	-0,0000449	0,0000424
P3237	0,3501819	0,0237362	14,75	0	0,3036448	0,3967191
P3239	-0,2224979	0,0213393	-10,43	0	-0,2643357	-0,1806601
P3247	-0,2565576	0,0143804	-17,84	0	-0,2847519	-0,2283634
P3249	0,0397983	0,01919	2,07	0,038	0,0021745	0,0774221
P3264	0,0995594	0,0256621	3,88	0	0,0492464	0,1498723
P3054	0,1358063	0,019714	6,89	0	0,097155	0,1744576
Sec	0,4163609	0,0208554	19,96	0	0,3754718	0,4572499
Sec2	0,497064	0,0542613	9,16	0	0,3906794	0,6034485
Sec3	0,6394052	0,1459288	4,38	0	0,3532977	0,9255128
Sec4	0,2502956	0,0271866	9,21	0	0,1969936	0,3035976
Sec7	0,2303062	0,0245698	9,37	0	0,1821348	0,2784777
Sec8	-0,0339791	0,0342616	-0,99	0,321	-0,1011523	0,033194
Sec9	0,2483438	0,0644524	3,85	0	0,1219786	0,374709
Sec10	0,6859392	0,0412143	16,64	0	0,6051345	0,7667439
cons	0,2209141	0,0179044	12,34	0	0,1858107	0,2560175

Chart 1: OLS Chile.

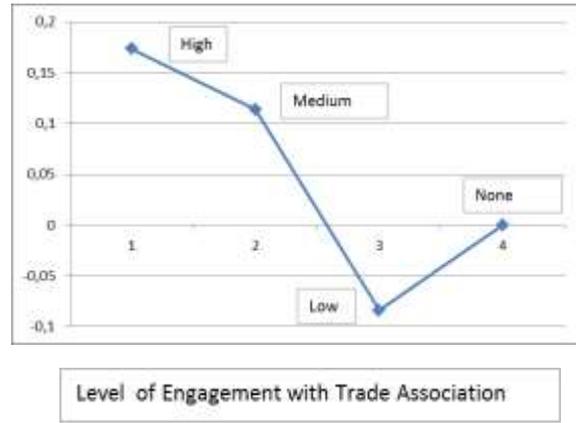
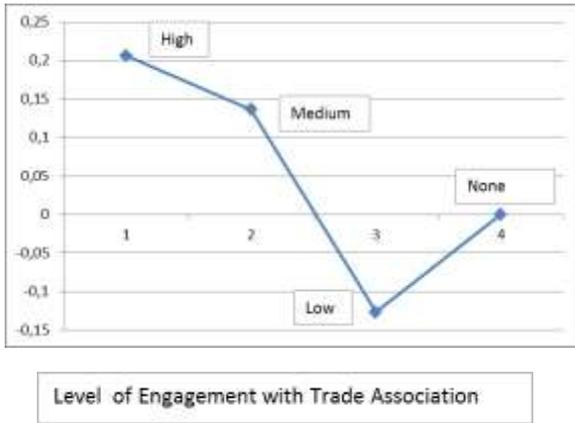
International Intensity

Table 2: GLM Marginal Effects Chile.

	dy/dx	Delta-method Std. Err.	z	P>z	[95% Conf.	Interval]
loc_quo	-0,0170435	0,0098383	-1,73	0,083	-0,0363262	0,0022392
TA1	0,173628	0,0319693	5,43	0	0,1109693	0,2362867
TA2	0,1136848	0,0220315	5,16	0	0,0705039	0,1568657
TA3	-0,0838054	0,0198191	-4,23	0	-0,1226502	-0,0449607
Age	-0,0016557	0,0007297	-2,27	0,023	-0,0030859	-0,0002255
Age2	3,70E-06	2,71E-06	1,37	0,171	-1,61E-06	9,01E-06
P021	0,0319871	0,0176584	1,81	0,07	-0,0026227	0,0665969
P3000	-0,1837547	0,0220973	-8,32	0	-0,2270647	-0,1404447
P3251	0,0553761	0,0219763	2,52	0,012	0,0123034	0,0984488
P3260	-0,1765773	0,0234098	-7,54	0	-0,2224597	-0,1306949
P3235	0,0244618	0,020756	1,18	0,239	-0,0162192	0,0651428
P224	-4,34E-06	0,0000214	-0,2	0,839	-0,0000463	0,0000376
P3237	0,3103562	0,0230131	13,49	0	0,2652514	0,355461
P3239	-0,2271615	0,023806	-9,54	0	-0,2738203	-0,1805026
P3247	-0,2149653	0,0135871	-15,82	0	-0,2415956	-0,188335
P3249	0,0226901	0,0193605	1,17	0,241	-0,0152559	0,0606361
P3264	0,1004441	0,0233769	4,3	0	0,0546262	0,146262
P3054	0,1393792	0,0202735	6,87	0	0,0996438	0,1791146
Sec	0,3452961	0,0198701	17,38	0	0,3063515	0,3842407
Sec2	0,4526651	0,0559147	8,1	0	0,3430742	0,5622559
Sec3	0,5720379	0,1486794	3,85	0	0,2806316	0,8634441
Sec4	0,2226394	0,0277436	8,02	0	0,168263	0,2770159
Sec7	0,217451	0,0234639	9,27	0	0,1714626	0,2634394
Sec8	-0,0072346	0,0400082	-0,18	0,857	-0,0856493	0,0711801
Sec9	0,2321262	0,0847472	2,74	0,006	0,0660247	0,3982276
Sec10	0,6155107	0,0381208	16,15	0	0,5407952	0,6902261

Chart 2: GLM Marginal Effects Chile.

International Intensity



The results presented above reject both of our hypotheses (H1 and H2). The co-location effect is not significant through OLS and not significant at a 5% level on the GLM marginal effects. On the other hand the relationship between level of engagement with a trade association and international intensity is not linear as initially portrayed.

Table 3: OLS Peru.

intensity	Coef.	Robust Std. Err.	t	P>t	[95% Conf. Interval]
TA1	0,1272103	0,0352761	3,61	0	0,0580186 0,1964021
TA2	-0,1919544	0,0277531	-6,92	0	-0,2463903 -0,1375186
TA3	-0,1278407	0,0262152	-4,88	0	-0,1792602 -0,0764212
Age	-0,0141033	0,0019783	-7,13	0	-0,0179837 -0,0102223
Age2	0,0000951	0,0000334	2,84	0,005	0,0000295 0,0001607
P3_1_1	-0,1392617	0,023601	-5,9	0	-0,1855536 -0,0929698
P3_1_2	0,0037787	0,0407625	0,09	0,926	-0,0761744 0,0837319
P3_1_9	-0,110779	0,0269056	-4,12	0	-0,1635525 -0,0580054
P5_1_13_2011	0,0000575	0,0000139	4,15	0	0,0000303 0,0000847
P6_1_1_1	0,1036888	0,0230614	4,5	0	0,0584554 0,1489222
P6_1_1_2	0,0184341	0,0306361	0,6	0,547	-0,0416567 0,0785249
P6_1_1_3	0,0171649	0,0185883	0,92	0,356	-0,0192949 0,0536246
P6_1_1_5	0,064823	0,0222197	2,92	0,004	0,0212405 0,1084054
P6_1_1_6	-0,2066342	0,0195555	-10,57	0	-0,2449911 -0,1682773
P6_2_2_1	-0,0801951	0,0195362	-4,1	0	-0,1185142 -0,041876
P6_2_2_2	-0,071291	0,0227936	-3,13	0,002	-0,1159992 -0,0265828
P6_2_2_3	0,2075185	0,0238341	8,71	0	0,1607694 0,2542676
P6_2_2_4	0,0558559	0,020108	2,78	0,006	0,0164153 0,0952964
P6_2_2_5	0,1776503	0,0179731	9,88	0	0,1423972 0,2129034
P6_2_2_6	-0,0146863	0,0240797	-0,61	0,542	-0,061917 0,0325444
P6_2_2_7	-0,0573866	0,0299008	-1,92	0,055	-0,1160352 0,0012619
cons	0,6453083	0,1200438	5,38	0	0,40985 0,8807665

Table 4: GLM Marginal Effects Peru.

	dy/dx	Delta-method Std. Err.	z	P>z	[95% Conf. Interval]
TA1	0,0995835	0,0332278	3	0,003	0,0344582 0,1647089
TA2	-0,1766598	0,0274005	-6,45	0	-0,2303638 -0,1229559
TA3	-0,118014	0,0231421	-5,1	0	-0,1633716 -0,0726563
experiencia	-0,0126539	0,0016415	-7,71	0	-0,0158713 -0,0094366
experiencia2	0,0000722	0,0000292	2,47	0,013	0,000015 0,0001293
P3_1_1	-0,14141075	0,0234546	-6,03	0	-0,1873777 -0,0954373
P3_1_2	0,0132108	0,0426609	0,31	0,757	-0,070403 0,0968246
P3_1_9	-0,0937693	0,0279605	-3,35	0,001	-0,148571 -0,0389677
P5_1_13_2011	0,0000769	0,0000199	3,87	0	0,000038 0,0001158
P6_1_1_1	0,0843623	0,0248525	3,39	0,001	0,0356522 0,1330724
P6_1_1_2	0,014274	0,0300085	0,48	0,634	-0,0445416 0,0730896
P6_1_1_3	0,0184366	0,0187274	0,98	0,325	-0,0182685 0,0551417
P6_1_1_5	0,0843962	0,0225941	3,74	0	0,0401127 0,1286797
P6_1_1_6	-0,2004631	0,0178548	-11,23	0	-0,2354578 -0,1654684
P6_2_2_1	-0,0447711	0,0185846	-2,41	0,016	-0,0811962 -0,0083461
P6_2_2_2	-0,0754078	0,0225577	-3,34	0,001	-0,1196201 -0,0311955
P6_2_2_3	0,1898733	0,0232019	8,18	0	0,1443985 0,2353481
P6_2_2_4	0,0752096	0,0217129	3,46	0,001	0,0326531 0,1177662
P6_2_2_5	0,1447785	0,0172437	8,4	0	0,1109815 0,1785755
P6_2_2_6	0,0022921	0,0248157	0,09	0,926	-0,0463457 0,0509299
P6_2_2_7	-0,0829143	0,031691	-2,62	0,009	-0,1450274 -0,0208011

Chart 3: OLS Peru.

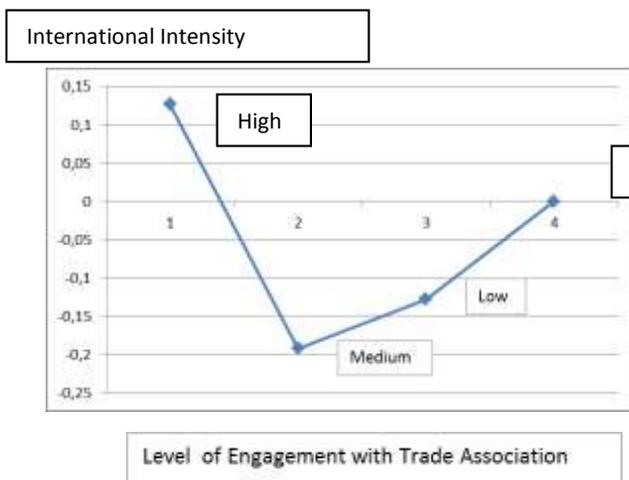
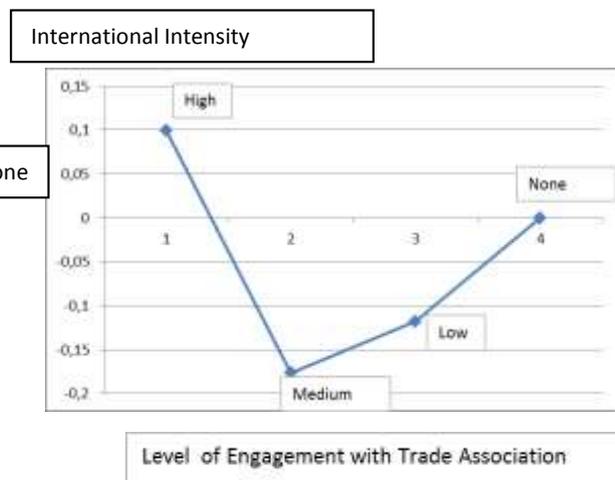


Chart 4: GLM Marginal Effects Peru.



The estimations from Peru show similar results in the relationship of level of engagement with a trade association and international intensity. The relationship is non-linear, therefore rejecting H2.

IV. Conclusions

Our results show that there is an effect of trade association engagement on international intensity. Most importantly, the measurements indicate that the relationship is curvilinear and not linear as originally proposed by our initial hypothesis.

In the cases of both Chile and Peru, firms that have no relevant relationship with the local trade association perform better in terms of international intensity than those that have a low level of engagement with the trade association. Some explanations to these results could be: a) Firms can decide on whether to build competitive advantage through multiple strategies, and engaging with a trade association is just one of them. Only firms that can access a high level of engagement obtain an advantage from such relationship. In this sense, firms that decide not to pursue a relationship at all are making a better use of their resources and focusing on other strategies instead of doing poorly in developing a relationship with the trade association. b) Control is an important aspect in a trade association, some firms complain on the fact that few firms have control of the trade associations in emerging economies (Felzensztein, 2008a). If some firms feel that they can't influence the trade association's agenda, they exclude themselves and don't pursue the relationship with the trade association. They are then forced to develop alternative ways to create competitive advantage.

Co-location doesn't seem to have a strong significant effect on international intensity. Only in the GLM model in Chile it shows significance under 10% but higher than 5%. The coefficient is also negative, indicating that competition is a key factor in emerging economies. This is also present in several statements from managers (Felzenstein, 2008a). Managers mention that the culture and mentality in Chile and other emerging economies doesn't foster cooperation as much as competition. A lack of trust is an underlying factor in this environment.

Our study makes several contributions to the literature of internationalization. It is the first study proposing and demonstrating a significant relationship between level of engagement with a trade association and international performance. It is also the first study to bring the issue of co-location and level of engagement with a trade association together under the same framework. Further studies should focus on confirming if the findings shown here are also consistent with the realities of developed countries, where governments and the power of institutions are more relevant in the business scene.

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Funding, the Magic Wand of Academic Entrepreneurship

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Funding, The Magic Wand Of Academic Entrepreneurship

Abstract

Studies on academic entrepreneurship (AE) conclude that motivation of academics might include non-financial rewards (2010). A further exploration into factors that might influence AE could help evaluate and support these activities. This study seeks to explore Life-science academics' views of such factors using grounded theory to analyze open-ended interviews. Our findings suggest that funding availability is the main driver of *academic* entrepreneurship. Furthermore, such funding is not sought primarily to exploit an opportunity but rather to fund further research. Knowledge is to the academic what opportunity is to the entrepreneur. Other factors with lesser importance include: academic's personal characteristics, institution's characteristics, and the project itself. The analysis also indicates that trust, based on both capacity (are they capable?) and empathy (will they look after my interests as well?), moderates the relationship between the institution and the academics. Project-related considerations must be evaluated when assessing AE. This is particularly important for scholars, as the same academic can have different views based on the different projects she/he is (or has been) working on.

Introduction

The many shades of academic entrepreneurs.

The field of academic entrepreneurship is relatively new and span out of the push and pull of academic research's commercialization. The initial focus of research commercialization was to license research outcomes to corporations or, in a few cases, to form new ventures (Thursby & Thursby, 2002). Other commercialization pathways have been expanded to include: engaging in large-scale science research (externally funded); earning supplemental income; gaining industry support for university research; obtaining patents or generating trade secrets; and commercialization, forming or holding equity in private companies based on a faculty member's own research (Louis, Blumenthal, Gluck, & Stoto, 1989).

This broad consideration expands to academic entrepreneurs. Academics are considered entrepreneurial when they:

1. think about commercializing a new technology (Bower, 2002), which is similar to the concept of a nascent entrepreneur;
2. create new technologies that can be patented and licensed through any form of commercialization (Goktepe-Hulten, 2008; Nicolaou & Birley, 2003b);
3. collaborate with industry on knowledge application and exploitation (Lam, 2010; Viale, 2010);
4. provide consulting services to industry (Perkmann & Walsh, 2008); and
5. create and develop research-based enterprises, either within universities or externally (Wright, Mosey, & Noke, 2012).

What motivates academics to behave entrepreneurially or not?

Academics' personal characteristics, social acceptance of research commercialization; type of research; social capital and role models; and policies, especially with regards to funding have been associated with AE. In terms of personal characteristics, academic's attitude towards starting a firm and the perceptions of her/his capacity to succeed at becoming an *academic* entrepreneur are the two most important factors in determining an academic's entrepreneurial

behavior (Clarysse, Tartari, & Salter, 2011; Goethner, Obschonka, Silbereisen, & Cantner, 2011; Prodan & Drnovsek, 2010).

Studies on social acceptance have shown mixed results. Jain (2009) suggests that the social norms of science: universalism, communism, disinterestedness, and skepticism (Merton, 1973), contrast with the entrepreneurial behaviors of uniqueness, appropriateness, passion, and optimism. It is no surprise, therefore, that some authors report the difficulties academics have in understanding the commercial sphere, whilst adhering to traditional academic values (Sansom & Gurdon, 1993; Stuart & Ding, 2006).

The type of research also has an impact in academics' behavior. In general, basic research does not lend itself to commercial applications, whereas applied research does. Applied research is usually related to some form of collaboration with industry. And ties with industry could have a positive impact on: an academic's attitude towards research commercialization (Mosey & Wright, 2007); publication/patenting rates (Blumenthal, Campbell, Causino, & Louis, 1996; Van Looy, Ranga, Callaert, Debackere, & Zimmermann, 2004); and, in particular, on entrepreneurial activities (Nicolaou & Birley, 2003b; Papagiannidis, Li, Etkowitz, & Clouser, 2009). Academics that work with, or are funded by, industry are more likely to include commercial considerations when choosing research topics (Blumenthal et al., 1996). Mowery (2011) also suggests that relationships with the commercial world would positively impact an academic's views concerning commercialization. On the negative side, Jones (2000) observes conflicts of interest arising from close ties between academics and industry; and Hong and Walsh (2009) conclude that academics have become more secretive and competitive in the last 30 years, due to what is perceived as the negative impact of research commercialization. Additionally, interaction with industry does not support the academic's career, whereas interaction with other academics does (van Rijnsouwer, Hessels, & Vandeberg, 2008). Furthermore, applied research does not provide the same career benefits to academics who need to present and publish new knowledge (Lacetera, 2009).

Policies have a high impact on an academic's entrepreneurial behavior (Audretsch, Weigand, & Weigand, 2002). These policies are primarily related to IP ownership and funding. Kenney and Patton (2009) conclude that the inventor/ownership model (an institutional policy providing academics full ownership and accountability over the results of commercializing their research) promotes entrepreneurial behavior in academics and students.

Funding must be observed with caution. Funding availability impacts not only the career choices of academics but also the metrics used to evaluate academic performance. The positive relationship between the volume of publications and the volume of patents reported by several authors (Agrawal & Henderson, 2002; Gittelman & Kogut, 2003; Louis et al., 1989; Thursby & Thursby, 2002) should be evaluated with caution because of the disproportionate amount of grants received by a limited number of academics. The scientific community, including the sector that decides on the allocation of public funding, is biased towards supporting the academic, not the research (Hackett, 1990; Nixon, 2001). As a result, the 'pecking order' established might be causing a bias that favors some academics over others (Rauch & Frese, 2007). This could then explain why some academics have a significantly higher level of publishing and patenting; and are also disproportionately reported as supporting licensing deals (Sine, Shane, & Di Gregorio, 2003), or being acknowledged as nascent entrepreneurs (Hoye & Pries, 2009). It seems, therefore, that research funding impacts research capacity and this, in turn, influences the academic's ability to publish. Academics could also be pushed into behaving entrepreneurially. Some programs fund the creation of (University Spin-offs) USO, provided the academic participates in the day-to-day operations of the firm (Toole & Czarnitzki, 2007).

The final consideration concerning an academic's entrepreneurial behavior is the reward system. Academics are typically evaluated by the quality of their teaching, research and image (Shapiro, 2009), and not on the revenues generated from research. The compensation that an academic receives for her/his involvement in a commercial project, such as salary, royalties, and equity (Goldfarb & Henrekson, 2003), are not aligned with the academic's career evaluation (Owen-Smith & Powell, 2002). Arguably, these rewards might not fulfill the academic's need for prestige and curiosity highlighted by Merton (1973) and Lam (2010). Furthermore, academics face a high risk when participating in a USO, as such career shifts encroach on the time available to devote to writing and publishing articles (Buenstorf, 2009).

How these rewards impact an academic's career depends also on the stage of the individual's career. Academics' careers follow a life-cycle, of sorts, being initially driven by curiosity (puzzle), followed by the prestige attached to publishing first, and then coming to a close with financial rewards through prizes (Stephan & Levin, 1996). It is not surprising then that "only after scientists have accumulated enough knowledge and more job security in the tenured academic employment system, do they start to seek financial returns to science" (Ding & Choi, 2011, p.76). If this is the case, then studies of *academic* entrepreneurs should consider their career stage as a critical contextual factor.

It seems, therefore, that in researching *academic* entrepreneurship it is important to guard against oversimplifying a complex process, a caution also noted in entrepreneurial studies in general (Neergaard & Ulhøi, 2007). The newness of the field, the complexity of the process, the seemingly vast range of commercialization activities, and the many possible relationships between the academic and the possible commercialization pathways calls for a deeper qualitative investigation of the factors that academics perceive are impacting their entrepreneurial behavior. This type of study must also include the views of those who are not participating in the process.

Methodology

An exploratory study was designed to capture the views of Australian academics in life-science schools. A convenience sample technique was used - contacting all universities in the region- following by a snow-ball technique to expand the sample to other academics that have left universities to start and run a university spin-off.

In total, 30 academics were interviewed in person, or via skype to capture their views on factors external to the academic and factors internal to the academic that might impact research commercialization¹⁹. Inquiring about the opinions about a third person, 'the scientist', instead of 'your situation, or yourself' seems to elicit responses that are less judgmental and more descriptive (Wengraf, 2001). The term 'research commercialization' was used instead of *academic* entrepreneurship to capture the various modes of exploitation with respect to research commercialization. Interviewees were also asked various profiling questions, such as: gender; birth decade; job title; number of patents granted; licensing deals and USOs; and number of publications. Additionally, six technology transfer officers (TTO) from the four different universities in the region were interviewed. The sample of academics

¹⁹ This research question was part of a three question open-ended interview that included: (1) What do you think about commercializing academic research?; (2) What do you think is the role of the academic in the process?; and (3) What factors external to the academic do you think impact the commercialization of research?

interviewed included 27 males and 3 females, ranging from 30s to 70s decimals years, and seven to 44 years in academia.

The number of reported publications varied greatly, from 22 to 1800, and the number of registered patents in which the interviewees had participated ranged from zero to 70. Seventeen had participated in at least one USO, one was involved in the formation of a USO, and six had been involved in more than one USO. Finally, eight of the interviewees had participated in negotiating a licensing agreement.

These in-depth interviews were analyzed using grounded theory (Charmaz, 2006) to determine the main factors impacting academic entrepreneurship from the academics' perspective in a four-step process:

1. An initial list of open coded words (*concept words*) was defined directly from the transcripts on the basis of a line-by-line analysis.
2. *Concept words* were organized into *main themes* (selective coding).
3. *Concept words* and *main themes* were organized establishing patterns or relationships between these codes, for example, by: comparing samples; reorganizing in hierarchies or categories; and assessing similarities and differences. This coding process is referred to as *axial coding*.
4. *Axial coding* was organized by theorizing about the information collected. These codes are referred to as *theoretical codes* (or *memo writing*). Seven theoretical frameworks were used to interpret the interviews.

The theories used in this study conceptualize how entrepreneurs and academics behave and include:

1. The process of discovering/creating/exploiting opportunities. (Krueger & Carsrud, 1993; Shane & Venkatamaran, 2000).
2. Push and pull entrepreneurship. (Amit & Muller, 1995).
3. The various forms of entrepreneurial activity. (Bygrave, 2007; Schumpeter, 1947).
4. The entrepreneurial intentions and motives of *academic* entrepreneurs. (Goethner et al., 2011; Lam, 2010).
5. Holland's theory of career choices. (Holland, 1958).
6. The Mertonian norms of science. (Merton, 1973).
7. The temporal and episodic nature of entrepreneurial behavior. (Eckhardt & Shane, 2003; Welter, 2011).

Seven main themes emerged from the interviews, namely: academics, funding, TTOs, the institution, the project, trust, and support. However, because the focus of this study is on trying to better understand *academic* entrepreneurial behavior the TTO and institutional theme have been merged, reducing the number of themes to six. Given the questions asked, three of these themes are to be expected, namely: academics, the institution, and support systems. However, three new themes emerge from the analysis: (1) funding availability is the main driver of *academic* entrepreneurship, not to exploit an opportunity but rather to fund further research; (2) trust, based on both capacity (are they capable?) and empathy (will they look after my interests as well?), moderates the relationship between the institution and the academics; and (3) attributes associated with a given project can have a significant impact on *academic* entrepreneurial behavior (note also that academics will often be managing several projects at the same time). This last observation is particularly important for scholars, as the

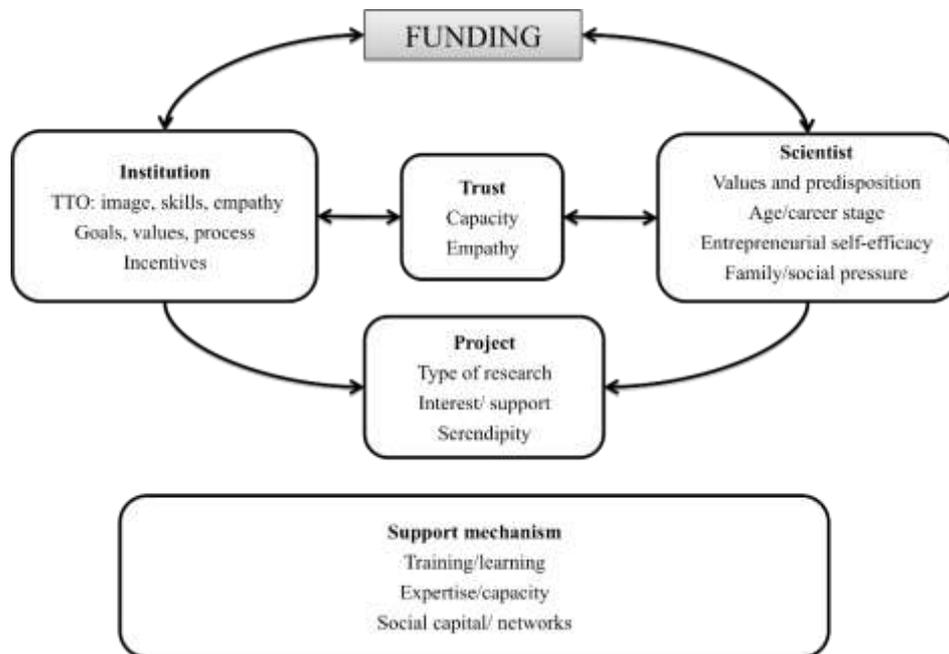
same academic can have different views based on the different projects she/he is (or has been) working on.

It is worth noting that the notion of an entrepreneurial personality did not seem to fit with the analysis of the interviews, au contraire, a more dynamic picture emerged from the analysis. In this case a central argument was evident when observing the various theoretical codes: opportunity recognition and exploitation is not central to *academic* entrepreneurship.²⁰

Factors that impact *academic* entrepreneurial behavior

The analysis indicates that six factors that influence academics' entrepreneurial behavior: the individual academic; funding; the institution; the specific project; support mechanisms; and trust. Figure 1 summarizes the relationship between these factors: Funding is the primary driver of academic entrepreneurial behavior, however, there are three key components influencing this behavior: the academic's predisposition towards research commercialization; the institution; and the specific project(s) the academic is involved with. Further, the relationship between the institution and the academic is moderated by trust.

Figure 1: Understanding *academic* entrepreneurship



Funding, the magic wand

One of the most interesting insights to emerge from this study has been the realization that, at least for the majority of the academics interviewed, *academic* entrepreneurship appears to be driven by the academic's need to fund research; rather than to 'profit' from research. The advancement of science appears to be the primary motivator for academics (and is certainly critical to their academic careers), whereas the success of a USO (or any form of research commercialization) appears to be of secondary importance. In this sense, *academic* entrepreneurship seems to have more in common with 'push' or 'necessity'-based

²⁰ This represents a major deviation from general studies of traditional entrepreneurship. Instead, academic entrepreneurship is an avenue for funneling funds into research in a way that could be perceived as mimicking entrepreneurial behavior.

entrepreneurship than with ‘pull’ or ‘opportunity’-based entrepreneurship (Amit & Muller, 1995). Therefore, the findings from this study support the conclusion that the permission given to universities (through legislative changes) to profit from government funded research is not sufficient (in and of itself) to drive academics to start USOs (Grimaldi, Kenney, Siegel, & Wright, 2011).

Academics appear to find themselves caught in a vicious circle. They receive funding based on their track records, but they need funding to develop a track record. Further, some academics might pursue funding via a USO to continue developing their research because (as one interviewee noted) *the success rate [in public funding] is 20%. It's demoralizing year after year when they don't get the grant*. Such funding also helps to support universities as some of the funds are typically distributed to cover certain administrative costs, some of which might not be directly related to the specific project being funded. In part then, external funding conditions the career paths of individual academics and their prestige within the academic community, including both their intimate circle of co-workers and also colleagues working in similar areas in other institutions. This observation could provide an explanation for the rather distinctive motives for academics’ entrepreneurial behavior: curiosity, prestige, and financial gains (Lam, 2010).

Contextualizing *academic* entrepreneurial behavior as being significantly influenced by the need to secure funding (for research purposes rather than business development) serves to substantially broaden the discussion of *academic* entrepreneurship. In this sense, some academics can appear to behave entrepreneurially out of a need to secure the funding they require to carry on their research, while others might embrace entrepreneurial behavior as a way of generating funds for various stakeholders (including: their team; the department; the university; themselves; and the investors). It is also some possible that some academics might reject the concept of research commercialization, particularly if (due to their seniority and previous experience) they have a high probability of being able to attract public grants. It is also possible that certain academics will welcome and enthusiastically engage in the process of forming a USO, particularly if it is likely to help them advance their careers.²¹ The disparity of circumstances confronting academics potentially creates a divide between those academics who favor research commercialization and those who do not, which coincides with the “schizophrenic divide” referred to by Philpott, et al. (2011, p.161).

Pressure from family to earn more money whilst working as an academic was also considered an important factor behind the desire of some academics to get involved with commercializing their research. Given rising costs, it would appear that a university salary alone does not provide a reasonable standard of living, particularly for younger academics.

A second source of pressure to engage in the commercialization of research came from colleagues. It seems that there are many beneficiaries from research commercialization because earnings from partnerships, licensing agreements, and even USO stock issues are typically shared with both the university and the academic’s department. This gives rise to a potential conflict because while *academic* entrepreneurship is viewed by some academics as being bad for the purity of science, they acknowledge that it helps to generate the funds necessary to carry out research. Since much of the academic funding is approved by peers, even when using blind reviews, chances are that research that has the highest capacity to generate new funds is more likely to be funded. This conflict requires much more attention

²¹ Many of the academics interviewed (both older and younger academics) emphasized their concern about the availability of research grants for younger academics that needed to build their careers by publishing.

than it has been given in the literature to date and serves to highlight the importance of incorporating the context into any comparison of *academic* entrepreneurs and *traditional* entrepreneurs (Jain et al., 2009).

Interestingly, personality traits were not perceived by the interviewees as having any impact on the entrepreneurial activities of academics. Traits assigned to *traditional* entrepreneurs include: internal locus of control; risk-taking; autonomy; low need for support; need for achievement; proactivity; and tolerance for ambiguity (De Vries, 1977; McClelland, 1965; Muller & Gappisch, 2005; Sexton & Bowman, 1985). Such traits have been studied by comparing *traditional* entrepreneurs to: the general population (Baron, 2000; Rauch & Frese, 2007); small business owners (Carland, Hoy, Boulton, & Carland, 1984); and corporate managers (Sexton & Bowman, 1985), or a combination of benchmarks (Stewart, Watson, Carland, & Carland, 1999). However, these traits might not be sufficient to explain why some academics behave entrepreneurially and others do not. It could even be argued that the traits required to be an entrepreneur are also required to develop a career as an academic researcher (Etzkowitz, 2003).

Entrepreneurial intention versus academic intention

If we consider ‘entrepreneurial intention’ as a “*focused state of mind that directs attention, experience, and action towards a business concept*” (Bird, 1988, p.442), then it could be argued that academics have an ‘academic intention’ towards the research questions they investigate. The GT analysis indicates that the pursuit of knowledge remains the primary motivation of all academic scientists. Knowledge is to the academic what opportunity is to the entrepreneur.

Regardless of their individual views about *academic* entrepreneurship (research commercialization) academics seem to see their role as being related to the creation of knowledge and not to the discovery/exploitation of an opportunity. The financial rewards received from the commercial exploitation of academic research seem to be secondary to academics. The rather unique entrepreneurial motivations of *academic* entrepreneurs (compared to *traditional* entrepreneurs) has been recognized recently and have been described as either: puzzle (curiosity), ribbon (prestige), or gold (money) motives (Hong & Walsh, 2009; Lam, 2010).

In general, academics do not seem to be interested in profiting from their research. Interestingly, disinterestedness is one of Merton’s (1973) norms of academic science. The GT analysis indicates, however, that this disinterestedness is only relevant with respect to the profits that might accrue to the individual academic and not with respect to the funding that might flow to the researcher’s projects, team, school, and university. All individuals expressed a keen interest in finding ways to fund academic research, even those who had left academia to start a USO. Changes in an academic’s level of acceptance of *academic* entrepreneurship could impact her/his involvement in a particular project as a means of funding future research. As noted by one of the interviewees: “*the prestige, or the media coverage or rewards have much more effect than any of the monetary stuff. I mean for most of us had money been partly motivation we would never have chosen this sort of job anyway*”.

Finally, academics seem to accept an ‘intent to profit’ only when it is absolutely certain that it will not have an impact on the quality of their research: *I have no problem with the commercialization of research, as long as it doesn’t, sort of, degrade, you know, all of the research that we do.*

Trust as a moderating factor

Trust appears to moderate the relationship between academics and their university. The university, and particularly the TTO manager, earns trust by demonstrating a capacity to support *academic* entrepreneurship, as well as by exhibiting an intention to respect the academic.²² In this sense, the reputation of the TTO manager plays a significant role in fostering (or hindering) academic participation in the process of research commercialization.

Leaders within the university must also declare their intention to support academics and to build bridges between academia and industry. It is also important that those university leaders share the academics' interest in advancing knowledge for the betterment of humankind. This potential tension between universities and their academic communities coincides with the phenomena of academic capitalism described previously by Slaughter & Leslie (1997) and Slaughter & Rhoades (2004). Interestingly, the academics in life sciences did not seem to be aware that their business school colleagues might be able to support them through the research commercialization process.

Trust also moderates the relationship between universities and TTOs. It is important for academics to work with the university by reporting their findings and by collaborating with the TTO. In practice, and according to the interviews with TTOs, some academics do not report important findings prior to publication for three reasons. First, they may not know about potential commercial applications. Second, they may not want to use their time to participate in research commercialization. Third, they may doubt their university's intentions to act in the best interests of academics and for *the betterment of humankind*. In some cases, academics will shift universities or will pursue USOs on their own. It could be argued that a lack of trust prevents academics from disclosing research that might be commercially interesting. Failure to disclose research results with potential commercial applications is a current topic of high interest to policy makers (Hunter, Perry, & Currall, 2011). Some authors suggest that universities should consider implementing a form of 'insurance' policy by guaranteeing to reinsert academics to their previous academic positions should a USO they initiate and manage fail (Panagopoulos & Carayannis, 2013). Such 'insurance' could be interpreted as an act of care that could raise academics' trust in the university. Academics that leave their university, however, typically only have a small window of entrepreneurial exploration as their ongoing research funding is typically closely related to their publication record, which tends to diminish as they become more focused on their new venture.

To be or not to be, that is the project

Academic entrepreneurship is not only episodic in nature but project dependent. The academics and TTO managers interviewed made the observation that the same academic (individual) under the same context (university and support mechanisms) might demonstrate entrepreneurial intentions towards one research project and not towards another. How academics chose which projects have 'legs' (and which to discard) is a matter that requires further investigation. As noted by one of the interviewees: *some things might be very quick and easy to take from discovery to marketplace, others might need a decade of research and development and an awful lot of extra funding.*

Academics usually participate in several research projects at the same time. Some projects are interdisciplinary, and they will often be at different stages of development. As academic rewards are largely based on publications and not the application of research findings,

²² At the time of the first interview one of the universities represented in the sample had recently, unsuccessfully, sued a former academic for IP rights.

academics typically have little time available to explore commercial application possibilities. As a result, applied research seems to entice more entrepreneurial behavior than does basic research. Similarly, research projects that get funded, or are highly appreciated by industry partners, seem to also increase an academic's entrepreneurial behavior.

Because of the diversity of projects in which academics concurrently participate, studies of *academic* entrepreneurship must consider, as part of their research methodology, how an academic's entrepreneurial behavior can be project-specific. As noted earlier, an academic might behave entrepreneurially towards one project but not another project. In this sense, *academic* entrepreneurship is not merely person-centric, episodic, and impacted by the institutional context and support mechanisms, but it is also project-related. It is not surprising, therefore, that it is so difficult to fully understand this phenomenon.

The analysis also indicates that academics welcome engagement with industry, both because they feel that it improves the relevance of their teaching and because it helps them understand/explore industry needs. Although not specifically examined, the academics that appeared more favorably disposed to research commercialization had previously engaged with industry in various forms, such as: participating in joint projects; receiving grants; supervising students' internships; and working in industry during a sabbatical or under some temporary arrangement. It seems, therefore, that industry experience is related to *academic* entrepreneurial behavior; as is the case with *traditional* entrepreneurship (Chen, Greene, & Crick, 1998; Politis, 2005; Westhead & Wright, 1998).

In terms of networking, it seems that academics rely quite heavily on their connections to explore potential entrepreneurial opportunities. Here personal relationships appear more relevant to academics than more formal relationship with the TTO manager, for example. It is interesting to observe that academics seem to extend the Mertonian norm of disinterestedness to their social networks in the case of opportunity exploration. Many of the academics interviewed referred to their participation in research conferences as a major form of networking, not only for research projects but also for loosely discussing the challenges academics face regarding research commercialization. Interestingly, however, the academics did not seem keen to share their profit-seeking views at such events.

The most relevant conclusion of this study is that **knowledge is to the academic what opportunity is to the entrepreneur**. As discussed previously, an academic's entrepreneurial behavior seems to be primarily determined by her/his intention to 'further the advancement of knowledge' rather than by personality traits, which tend to be the focus of *traditional* entrepreneurship studies.

Interestingly, the focus on knowledge creation by academics appears similar to the focus by entrepreneurs on 'opportunities', as described by Bird (1988). This intention to focus on knowledge creation seemed consistent to all of the academics interviewed, regardless of their participation in any form of research commercialization. This observation was supported by the TTO managers who expressed frustration with the lack of attention paid to commercial applications by academics and also their lack of interest in financial gains. A finer analysis of the interview data, however, indicates that academics do want financial rewards so they can continue to perform their research and they also want to provide 'value' for the suppliers of research funding. For many academics the main beneficiaries of their research (in the form of new knowledge creation) should be: the public (as taxpayers); the department or laboratory they work in; and the university, rather than themselves. This conclusion supports Krabel's (2009) observation that academics are more interested in the impact their research can have on the lives of patients than on profiting from an opportunity.

Unintended consequences and further avenues for research

While *academic* entrepreneurship is a powerful concept it can result in some negative consequences. While these issues are outside the scope of this study it is important that they are acknowledged. If we are to consider the positives of *academic* entrepreneurship, we must also create mechanisms to manage the following (potentially negative) consequences: (1) A lack of trust in the process of knowledge creation; (2) an imbalance between risks and rewards; (3) possible misrepresentations of the potential rewards for universities and society; (4) the potential erosion of basic research; and (5) the possible negative impact on education.

The introduction of financial rewards has potentially created a series of inappropriate incentives which, according to some authors, has had a negative impact in terms of research goals (Campbell & Campbell, 2006). This lack of trust is not limited to within the academic sector but extends to the general population, which is also wary of the impact of financial considerations on the validity of academic research (Chalmers & Nicol, 2004). Anokhin and Schulze (2009) have raised the risks associated with this erosion of trust in terms of: asymmetries of information; increased risks; and higher transaction costs. Concerns about the disclosures made by academic's have also been raised (Hunter et al., 2011; Thursby & Thursby, 2002). This is an issue that warrants further investigated.

A second consequence of *academic* entrepreneurship is the potential imbalance between the risks and rewards for the various stakeholders. It is debatable whether taxpayers receive any direct benefits from the research funding provided by government, other than an increase in the number of new products/services on offer, for which they will have to pay (Chalmers & Nicol, 2004; Clark & Li, 2004). There is a potential moral hazard that arises when public servants act in the name of the government. Public servants derive no benefit, and nor do they incur any cost, from their research funding decisions and, therefore, it is difficult to assess their accountability in the process. It is arguable that the big losers from the growing emphasis on *academic* entrepreneurship have been the institutions and the academics due to the decline in available research positions as a result of government funding cuts and a reconsideration of institution/employee agreements (Marvizon, 2008; Owen-Smith & Powell, 2002).

The third unintended consequence of *academic* entrepreneurship is the misrepresentation of the potential benefits of research commercialization to universities and society at large. It has been argued that the existing 'business' metrics are not appropriate for evaluating the socioeconomic impact of academic research (Donovan, 2007a) and that qualitative measurements could be more valid (Donovan, 2007b). Further, it has been suggested that USOs do not necessarily invigorate markets or create new jobs (Reitan, 1997). Au contraire, it seems that many USOs are established purely for the purpose of attracting government funding as a substitute for previous forms of funding that are no longer available. To the extent that this is the case, public policies encouraging the establishment of USOs are likely to lead to distortions in the market (Clark & Li, 2004).

The fourth and least visible unintended consequence of promoting *academic* entrepreneurship is the potential erosion of basic research. Most research requires significant amounts of funding and if the available funding is directed towards applied research this will, necessarily, limit the creative and inquisitive nature of academic research (Grimpe, 2012). If we assume that basic research has a long-term impact on socioeconomic development, then the future is likely to be stagnant (Coccia & Rolfo, 2008). For example, in the case of life sciences, the Cohen-Boyer patents literally created the biotechnology industry and led to a spur in applied research, both public and private (Feldman, Colaianni, & Liu, 2007). Note

that the Cohen-Boyer patents were secured prior to the enactment of the Bayh-Dole Act and, therefore, it is questionable whether government policies in this area have had much of an impact (Zucker, Darby, & Brewer, 1998).

If we don't continue to build the large building blocks of science, our new technologies will rest on minor bricks, without a solid foundation. There is ample historical evidence of the invisibility of the foundation blocks until enough complementary or applied research is built on top of these blocks (Smil, 2005, Perez, 2003 #885). While scientists recognize the need for large building blocks, it is simply impossible to predict their usefulness and, therefore, it seems that it is simply impossible to predict, ex-ante, the value of basic research.

Curiosity-based research, then, has its place and value, a value that cannot be quantified ex-ante. Defining the financial obligations and rewards derived from this research cannot be limited to a research group, an academic body, or even a country. The benefits are, typically, global and universities should take a "leading role in promoting cultural and technological forms of citizenship" (Cooper, 2002, p.210). In order to fully exploit the benefits of research, governments need to foster absorptive capacity (Rogers, 2001) and a healthy entrepreneurial ecosystem.

The last unintended consequence relates to the quintessential mission of the university, that is, to provide certified education. The original concern about academic capitalism raised by Slaughter and Leslie (1997) has been echoed in other parts of the world (Maher & Tetreault, 2008; Ozawa & Nakayama, 2009; Rui, 2004; Slaughter & Leslie, 2001; Walker, 2009; Ylijoki, 2003). There is the risk that the interests of students can become lost in the process. As one of the most commercially successful academics interviewed in this study claimed: "the main issue with universities is not research, it is simply that they have forgotten to educate citizens that are useful to the world." There is much to explore in this area. Hopefully, academics and other stakeholders would reflect upon the role of universities, and take action.

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Linking Triumphs and Tragedies: Variability in Entrepreneurial Teams Outcomes and a Re-Examination of the Link between Team Diversity and Venture Performance

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Abstract

Research on entrepreneurial teams has typically focused primarily on predicting how to improve teams' average outcomes. In contrast, effects on variability of performance have received little attention, even though, in situations with critical performance thresholds, a team's average outcome might be less important than a spread of outcomes. In particular, in entrepreneurial environment, effects on the average performance may matter less than the possibility of exceptional successes such as achieving an IPO or catastrophic failures such as a bankruptcy. We suggest that using outcome variability as a distinct theoretical construct can lead to novel insights in particular into the relationship between team diversity and performance. We posit that diversity decreases performance variability in the low diversity range but increases variability in the high diversity range. We verify these hypotheses by reanalyzing Kilduff et al.'s study of 35 teams engaged in a business simulation (2000), and demonstrate the benefits of distinguishing extreme versus average outcomes and mean-variance tradeoff as an effective approach to theory-building in entrepreneurship studies.

Introduction

Since teams often serve as fundamental building blocks of organizational design, scholars have long sought to understand the causes of superior team outcomes²³. Several central questions have emerged, including why certain teams, on average: produce more or higher quality output; have more positive dynamics (e.g. cohesion, trust, and effective transactive memory); or experience fewer negative dynamics (e.g. conflict; for evidence, see recent reviews [Curseu, Schalk, & Wessel, 2008](#); [Joshi & Roh, 2009](#)). These efforts have produced a substantial body of knowledge about the drivers of mean outcomes in teams and small groups ([Cohen & Bailey, 1997](#); [Mannix & Neale, 2005](#); [Mathieu et al., 2008](#)).

To date, the study of outcome variability—i.e. whether outcomes are consistent vs. spread in the extremes—has received little attention in the scholarly community, even though such effects on variability have significant consequences ([March, 1991](#)) and could be applied to help us understand critical aspects of team performance. This is especially true in contexts where the likelihood of extreme outcomes—either extremely low or extremely high—matters more than modal outcomes²⁴. Consider, for example, Venture Capitalist funds, for which having a venture team achieve a single extreme event in the form of a successful Initial Public Offering (IPO) is a far preferable outcome than slightly improving the fate of the average venture. Conversely, the first objective of an airplane cockpit crew is to avoid the catastrophic failure of a crash—an outcome that is far more important than slight improvements in any average performance metric such as fuel consumption or arrival delays ([Weick, 1990](#)). In both cases, rare extreme outcomes matter more to—and are more central to the goal of—those teams than slight improvements to the mean outcomes.

The study of outcome variability has three primary benefits for the development of theory. First, studying the drivers of outcome variability may help us to explain cases when antecedents affect the spread of outcomes around an unchanging mean. Typically reported as null results in studies focused on mean outcomes, this combination of both extremely positive

²³ For the purpose of this discussion, we use the generic term “outcome” to represent any dependent variable. This includes measures of output produced (e.g. productivity or quality) as well as interpersonal or group dynamics (e.g. conflict or cohesion).

²⁴ We use average, mean, expected, and mode interchangeably, all representing the first moment of a distribution.

and extremely negative outcomes merits examination in its own right. Second, understanding outcome variability may help us to interpret certain phenomenological contradictions, such as when a given antecedent increases both mean outcomes and the likelihood of a highly negative catastrophic event—one that outweighs the benefits of a higher mean (such contradictions have been explored by [Denrell, 2003](#); [Kalnins, 2007](#)). Third, this approach allows us to develop theory that remains relevant in situations when the factors that moderate relationships cannot easily be identified nor controlled, or where attempts at controlling them are inefficient ([Woolley, 2009](#)). In these cases, a variability-based approach can enable robust predictions, subsuming those contingencies and eliminating the need for such control, producing theory that is more *parsimonious* and *applicable* in both theory and practice. For all of these reasons, in many instances we believe it is valuable to explore the drivers of team outcome variability.

Despite these benefits, existing organizational studies on the subject are sparse, with examples including studies on knowledge diversity ([Taylor & Greve, 2006](#)), single inventors versus teams ([Singh & Fleming, 2010](#)), and brainstorming groups ([Girotra, Terwiesch, & Ulrich, 2010](#)). In this paper, we provide theoretical and empirical support for outcome variability as offering novel answers to questions about team performance that have been intractable to a mean-focused approach. In illustration of this, we revisit an often-examined relationship in the literature on group dynamics—the link between team diversity and team performance. We build on the van Knippenberg et al. (2004) categorization-elaboration model and reconceptualize the diversity-performance relationship as effects on effects on outcome variability. Using this, we generate and test additional complementary hypotheses for Kilduff et al.'s (2000) study of team diversity and performance. We also explore the consequences of such variability effects, in particular how they may influence the likelihood of extreme performance outcomes.

Outcome Variability in Organizational Studies

Before continuing, it is important to clarify what we mean by “outcome variability.” In so doing we review related work and highlight the differences with the approach classically used.

What is Outcome Variability and Why is it Important to Model it?

We define *outcome variability* as the spread of outcomes around the expected value. Typically, outcome variability is operationalized as a variance or related measure of spread ([Roberson, Sturman, & Simons, 2007](#)). Although recent reviews (e.g. [Mathieu et al., 2008](#)) find that organizational scholarship has focused primarily on exploring the drivers of average team outcomes, we argue that such an approach may not apply in the many contexts where the chances of reaching extreme outcomes matters importantly.

In the introduction, we invoked the example of a Venture Capitalist seeking IPOs for startup teams in their portfolio. We suggest that such situations—in which extreme outcomes determine performance as much if not more than mean ones—are not as rare as we might think, akin to contexts where managers assemble project teams with the objective of producing a radical innovation. In the pharmaceutical industry, project teams are expected to work towards producing drugs whose yearly revenues might surpass 100 million dollars, the so-called “blockbuster drugs” that generate the most profits. In this context, increasing the chances of a few project teams discovering such a blockbuster drug is more valuable than an increase in average performance of all project teams²⁵. In such industries, aiming at high performance thresholds that are both extreme and rare may not be equivalent to improving the average

²⁵ This example is particularly relevant as the pharmaceutical industry is one of the few industries that has applied real options approach to R&D projects, an approach intimately linked to the one developed here (see more about real options below).

performance of all the teams.

In contrast to these extreme success scenarios, in some contexts, it is critically important to avoid extremely negative team outcomes. Like the earlier example of airline cockpit crews, large firms' top management teams are expected to avoid extremely negative outcomes like major corporate fiascos and bankruptcies. Such events disproportionately affect the trust of investors and have disproportionate societal costs. Importantly, avoiding such scenarios need not be equivalent to optimizing the expected performance (Denrell, 2003; Kalnins, 2007; Levinthal, 1991; March, 1991).

How Have Scholars Viewed Outcome Variability?

A major approach to understanding variability and extreme events is the “mean-variance tradeoff” (March, 1991), whereby one predicts extreme events through the study of variability effects. This approach stands as an informative and conceptually important addition to predicting *only* how the average moves. To illustrate its reasoning, consider a factor that increases the mean of the outcome variable, while at the same time increasing its variability; in this case, as a result of the increasing spread of outcomes, the occurrence of extremely low outcomes may be increasing (a detrimental effect) even though mean increases (a beneficial effect). Such a conceptual contradiction constitutes the mean-variance tradeoff. Also possible is the converse, whereby a mean effect is positive while variability is reduced; in that case, because of reduced spread, the occurrence of extremely high outcomes could be reduced (a detrimental effect) even though the mean is still increasing (beneficial).

This reasoning was most prominently outlined in the organizational studies literature as the exploration-exploitation tradeoff (March, 1991:chapter 3). It also lies at the heart of the real options perspective (Kogut, 1991), which attempts to value formally the spread of organizational outcomes and has been applied to managerial tradeoffs, for instance in R&D choices (Huchzermeier & Loch, 2001) and has recently been applied in organizational behavior (Berk & Kase, 2010). However, the perceived complexity of real options has so far limited its use in organization studies. This paper aims to provide a middle ground approach as suggested by March's advocacy of variability effects (1991:chapter 3).

So far, scholars of teams have largely ignored outcome variability—considering it empirical noise or error that confounds their ability to predict the true outcome. In evidence of this, many scholars have designed their theoretical constructs with the express aim of controlling or reducing outcome variability. Take for example, Hackman's (1987) seminal work on the design of work teams. Hackman motivates this work by noting that prior research has produced results that fail to suggest ways to “reliably improve group performance” (p. 316). He goes on to note that research aims “to develop and test generalizations that chart what happens in groups reliably, validly, and relatively comprehensively (p. 316-317). Hackman's emphasis on “reliability” implies that consistency of results is definitional aspect of the outcome in question (high performance).

One of the few contexts in which scholars have examined outcome variability—in the form of extreme events—is in research on “high reliability organizations” (HRO). Such research seeks to understand organizational systems designed expressly to reduce outcome variability (e.g. Weick, Sutcliffe, & Obstfeld, 1999). Framed in terms of avoiding catastrophic accidents (Perrow, 1984), such research has examined high-risk contexts like nuclear power (Bourrier & Laroche, 2001), air traffic control systems (La Porte, 1988) and space programs (Vaughan, 1996). Importantly, however, the goal of this research is to understand the unique dynamics of these particular contexts—rather than generally predicting variability in outcomes. While in some cases scholars may draw transferrable inferences and identify lessons that are applicable to non-high-reliability contexts, this is a fundamentally different approach. In contrast, in this paper, we seek to understand the processes driving teams to have greater or lesser variability in their outcomes—irrespective of whether those processes occur in non-high-

reliability (e.g. traditional office environments) vs. high-reliability environments (e.g. cockpit crews).

Some exploration of outcome variability has, however, been carried out among organizational theorists in non-team settings. March's discussion of exploration versus exploitation (1991) identified performance variability in a population ecology perspective. This led to a stream of literature investigating variability explicitly in learning (e.g. "myths of management" by Denrell, 2003; and "competitions on extreme values" by Miner, Haunschild, & Schwab, 2003:803) and innovation perspectives (e.g. Fleming, 2004; Sørensen, 2002).

Specific Benefits of Theorizing about Outcome Variability

Having highlighted the traditional motives for examining the predictors of outcome variability, it is important to differentiate it from related but distinct concepts—like effects of variability (i.e. in the independent variable) and moderator effects—as well as to clarify its conceptual as opposed to methodological underpinnings.

First, outcome variability refers in this study to variability in the dependent variable. While much research has relied on measures of heterogeneity in the domain of diversity (Harrison & Klein, 2007)—most seek to understand how the spread on a given dimension (the *independent* variable) affects a given outcome (the dependent variable). Studies considering outcome variability, in contrast, seek to understand the effects of antecedents on the spread of the outcome—the *dependent* variable.

Considering outcome variability is also distinct from—although closely related to—modeling the effects of moderators. Effects on outcome variability is likely to result from the effects of a moderator on a given direct relationship (Cavarretta, 2008). As such, one might argue that identifying the moderators that drive the positive and negative sides of the variability is a more precise formulation of the relationship (Joshi & Roh, 2009; Pitcher & Smith, 2001). Considering outcome variability, however, allows us to take into consideration the reality and implications of the field setting itself. In the field, the moderating factors underlying some relationships are unfortunately often not well defined, predictable, nor actionable. In such cases, to predict outcome variability as driven by constructs that are well-defined, predictable, and actionable is a better fit with the data and phenomena available to practitioners and scholars.

The benefit of considering outcome variability, and its divergence from models of moderator effects, can be illustrated in research studying the demographic characteristics of successful teams. One may consider it preferable to fully specify the mechanisms at work, for instance considering that teams' social integration (O'Reilly, Caldwell, & Barnett, 1989) is a key contingency of the effect of team diversity on performance (van Knippenberg et al., 2004)²⁶. However, teams' dynamics vary over time (Gersick, 1988) and in ways that are often unpredictable and path dependent (Ancona et al., 2001). Such changes are particularly important as groups can even get locked into spirals (Lindsley, Brass, & Thomas, 1995) in which success feeds success and failure feeds failure, amplifying negligible initial differences into significant variation (Beckman & Burton, 2008; Hackman, 1990). These mechanisms work in both causal directions, from the social state to the outcome, as well as from the outcome to the social state (Kilduff et al., 2000; Peterson & Behfar, 2003).

Except in experimental conditions, even the best design cannot prevent significant fluctuations in the social dynamics of teams over time. One can imagine adjustments or interventions for the team, but in many situations (e.g. teams of astronauts, firefighters, or even top managers) practitioners and scholars must deal with fluctuating social dynamics throughout the life of the team. Furthermore, focusing the teams on controlling group processes often fails

²⁶ The moderation examples provided here will be further discussed in the theory section below and are graphically illustrated in **Figure 1**.

to yield clear results (Woolley, 2009). Overall, the intention to fully model group dynamics is a laudable goal. However, social integration remains, in many practical situations, an intrinsic *hazard* in the sense that it introduces some level of stochasticity (i.e. randomness), at least ex-ante, with potentially both upside and downside consequences.

Similarly, in a traditional mean-focused approach, one might consider that the relationship between team demography and performance is moderated by the fit of teams' information/knowledge with the task to accomplish (van Knippenberg et al., 2004). However, this is only valuable in situation where one knows beforehand what information a team needs and one can staff the team accordingly. However, once teams begin to work towards their goals, they frequently encounter issues that would have been difficult to predict ex-ante and are difficult to adjust ex-ante. Again, trying to model performance by taking into account moderation (here by information-task fit) will be fraught with dangers since this factor tend to fluctuate due to stochasticity of natural contexts.

Current research rightfully addresses expected performance questions (what effect will main factors have on average performance) and process questions (what are the moderating influence of contingency factors). Assuming those are established, scholarship says little about contexts where the contingency factors are uncertain (either uncontrollable or unknowable ex-ante). The approach we suggest here addresses this issue by considering such contingencies as hazards, and focusing on the predictable effects of main factors on resulting variability of performance—potentially leading to predictable extreme outcomes. In all such cases where the contingency factor fluctuates due to endogenous (e.g. social integration) or exogenous (e.g. task-information fit) stochasticity, considering outcome variability will complement the traditional mean approach by allowing to frame a theory without requiring the modeling/control of the contingency factors.

Effects of Team Diversity on Outcome Variability

To illustrate the value of considering outcome variability, we revisit an important, well-studied, and complex subject where current research leads to some contradictory conclusions: the effects of team diversity on performance. To date, team diversity research has focused primarily on predicting the effects of diversity on average outcome. Scholars have not systematically explored the role of diversity as an antecedent of extreme performance. In the coming subsections, we briefly summarize current debate on the topic and the role of variability in relationship between diversity and performance. Building on this, we propose new hypotheses about the relationship that we then test in a re-analysis of data from Kilduff et al. (2000) study of diversity and performance in 35 teams engaged in a business simulation.

Prior Scholarship on Diversity and Performance

Scholarship on the relationship between intra-team diversity and team performance has traditionally taken one of two approaches. The first perspective, focusing on social integration (O'Reilly et al., 1989) takes a “pessimistic” view of diversity (Mannix & Neale, 2005:34), suggesting that intra-team diversity can create divisions and tensions within the team that hinder team performance. This approach draws on classic arguments of similarity-attraction (Festinger, 1954) and self-categorization (Tajfel, 1982) that consistently find increased tensions as individual intra-team differences increase.

The second perspective, focusing on information availability, takes an “optimistic” view of diversity (Mannix & Neale, 2005:33), suggesting that intra-team diversity brings more unique information to the team, thereby increasing the odds that the team has the information it needs to perform. This increased information, in turn, improves expected team performance (Dahlin, Weingart, & Hinds, 2005; Gruenfeld et al., 1996; Page, 2007). For instance, exposure to minority thinking fosters a broader view of the issue at hand (Nemeth, 1986; Page, 2007), diverse teams exchange a wider range of information (Sommers, 2006) or have access to

external knowledge (Cummings, 2004).

As these two perspectives suggest contradictory effects, finding a simple main effect has proven elusive. Some authors have found the relationship to be positive and linear or U-shaped (Earley & Mosakowski, 2000), others have found it to follow an inverted-U-shape (Dahlin et al., 2005), while others have identified even more complex specifications (Allmendinger & Hackman, 1995; Van Der Vegt & Bunderson, 2005). However, starting with Nemeth and Staw (1989), reviews (Horwitz & Horwitz, 2007; Jackson, Joshi, & Erhardt, 2003; Milliken & Martins, 1996) and meta-analyses (Bowers, 2000; Stewart, 2006; Webber & Donahue, 2001) have not found a clear and consistent relationship between diversity and team performance.

To address this ambiguity, at least three major streams of research have emerged (Mannix & Neale, 2005; van Knippenberg & Schippers, 2007). The first has focused on more finely defining the independent variable—diversity (e.g., Boone, Van Olffen, & Van Witteloostuijn, 2005; Bunderson & Sutcliffe, 2002; Cramton & Hinds, 2005; Lau & Murnighan, 1998). The resultant definitions have led to classifications of the various possible dimensions of diversity (Harrison & Klein, 2007). A second stream of research follows Lawrence’s recommendation to “open the black box of demography” (1997) by exploring mediating processes. For example, Pelled et al. distinguish among the effects of diversity on emotional versus task conflicts, which they find eventually affect performance (1999), while Giambattista and Bhappu propose to distinguish effects of diversity on “social categorization and variety properties” (2010). Finally, a stream of research has focused on moderators of the relationship between diversity and performance, such as team characteristics (e.g., entrepreneurial orientation in Richard et al., 2004), intra-team perceptions (e.g., interpersonal congruence in Polzer, Milton, & Swann, 2002) or context (e.g., people orientation of corporate culture in Kochan et al., 2003:10).

In framing our re-analysis of diversity and performance, we draw particularly on the van Knippenberg et al. (2004) categorization-elaboration model, which combines both informational and social factors as moderators of the relationship between diversity and performance (see Figure 1.a). Van Knippenberg et al. argue that the effect of diversity differs, depending on whether the team’s information is well suited to the task (see Figure 1.b) and whether teams have good or bad social integration (see Figure 1.c). Concerning information, the model suggests that diversity increases performance in contexts where the information that the teams already hold is poorly-suited to the task and decreases it when their prior knowledge is already well-suited to the task (for example, see the moderation by task/problem complexity in Jehn, Northcraft, & Neale, 1999; Kavadias & Sommer, 2009). Conversely, with respect to social integration, the model suggests that diversity increases performance in the contexts with high social integration, but decreases it in contexts where social integration is low (van Knippenberg & Schippers, 2007).

----- Insert Figure 1 about here -----

Breaking New Ground: Linking Team Diversity to Performance Variability

The moderations reviewed above suggest that diversity increases outcome variability through social integration while decreasing it through information fit. In Figure 1b, diversity decreases the spread (a negative effect on variability) and Figure 1.c, it increases the spread of outcomes (a positive effect on variability). However, the variability effects implied by those moderations seem contradictory, a situation analogous to the tension already identified when modeling mean effects, whereby team diversity has both beneficial (informational) and detrimental (social) effects (e.g. Jackson et al., 2003; Milliken & Martins, 1996). To resolve this tension, scholars have argued that distinct mechanisms dominate at different ends of the diversity spectrum—distinguishing high diversity versus low diversity contexts (e.g. Balkundi et al., 2007; Earley & Mosakowski, 2000; Gibson & Vermeulen, 2003; Richard et al., 2004;

Uzzi & Spiro, 2005). Following this approach, we hypothesize that the link between team diversity and performance variability itself differs depending on a team's relative level of diversity. Specifically, we suggest that performance variability is driven primarily by informational hazards in contexts low in diversity, but by social hazards in contexts high in diversity (Balkundi et al., 2007; Richard et al., 2004). As evoked above, we chose to label those effects as *hazards* since they impact the variability, signaling an increase in stochasticity (randomness). Hence, we will in turn consider the informational hazard of low diversity range and the social hazard in high diversity range²⁷.

The Informational Hazard of Teams in Low Diversity. Within teams with relatively low diversity, we expect the lack of access to diverse information to be particularly problematic, as all members have similar profiles. While social integration should not pose much of a problem in that range, the main issue faced by these teams is whether they possess the knowledge required to accomplish their tasks. For instance, consider a population of executive teams that are low in functional diversity. One team might be composed mainly of marketers and another one mainly of production specialists. If the task rewards marketing skill, the first team would perform strongly and the second one weakly. For an alternative task with different requirements, the results might be inverted.

On the one hand, we expect teams that lack proper information (i.e. have low informational fit) to underperform, and among those, greater diversity to improve outcomes by reducing the information penalty. Conversely, we expect teams possessing the proper information to perform better, and among those, we do not expect greater diversity to bring significant informational benefits since such teams already have the information they need, while it implies the introduction of minority members—hence reduction of social integration—which we expect to negatively impact performance (Cronin & Weingart, 2007). In the words of Jehn, Northcraft, and Neale, “diversity is more likely to increase workgroup performance when tasks are complex than routine” (1999:H6). Thereafter, greater diversity implies a more positive effect on performance for the worst teams (who gain information) than for the best teams (who are penalized by reduced social integration), leading to a reduction of the spread of performance. This leads to the following hypothesis:

Hypothesis 1: In a population of teams with low intra-team diversity, greater diversity leads to lower variability of team performance.

The Social Hazard of Teams in High Diversity. In contrast, within teams with relatively high diversity, cognitive and social integration can fluctuate greatly, whereas we expect information to be widely available and thus relatively consistent. We expect the teams whose members get along to outperform, with greater diversity increasing the information available and used, thus improving performance. On the other hand, we expect that teams whose members do not get along will underperform, and among them, greater diversity does not bring informational advantage, as team members do not get along, they can exploit only shared information, which is reduced by diversity (Stasser & Titus, 1987), thereby hampering performance.

Overall, greater diversity is therefore associated with an increasing spread between the best- and worst-performing teams, because of stochasticity on social integration. This

²⁷ Splitting between low and high range is equivalent to hypothesizing a curvilinear effect. However, we favor a dual approach (in the low range vs. in the high range) over the term *curvilinear* as this is more consistent with the dual nature of the theoretical mechanism, and more consistent with our empirical approach testing the slopes independently at each end of range. Consistent with other studies distinguishing effect in the low range vs. effect in the high range, the ensuing theory does not aim nor require determining at which point this inversion of slope would occur, rather to establish that things start one way on one extreme of the range, and they turn around before reaching the other extreme of the range of the independent variable.

reasoning is similar to the one proposed in Taylor and Greve (2006), one of the few team studies predicting variability, but is nuanced here to apply only the high range of diversity. This leads to the following hypothesis:

Hypothesis 2: In a population of teams with relatively high diversity, greater diversity leads to higher variability of team performance.

Figure 2 integrates and summarizes the reasoning leading to both hypotheses. The x-axis represents a diversity variable, for example, age diversity, and the y-axis represents team performance. At relatively low diversity levels (the left side of Figure 2), greater diversity appears as a narrowing of the performance spread. At relatively high diversity levels (the right side of Figure 2), greater diversity leads to greater performance variability that is represented by an increasing spread.

----- **Insert Figure 2 about here** -----

Methods

The research setting was a MARKSTRAT business simulation, a game in which groups of players compete as management teams in a simulated market comprising five competitors. The game ran for three days during which teams made decisions on marketing, production, and R&D; a computer determined competitive performance results measured by market share and profits. The sample consisted of 159 business executives divided into 35 teams, which were the unit of analysis. Fourteen countries were represented, including at least 30 people from France, Germany, and Switzerland each. The managers occupied various roles in European firms, including more than 20 people each in marketing, R&D, manufacturing, and general management. The independent variables were measured early in the game, while the dependent variables were measured at the end of the game (see Kilduff et al., 2000, for the full details of the empirical settings)²⁸.

Full details about the variables, the methods and the results are available from the authors. The full analyses allow to verify the hypotheses, and are summarized in the Figure 3 which demonstrate the spreading effects occurring in the data as expected from the theory.

----- **insert Figure 3 here** -----

Discussion

Through our reconceptualization of the team diversity-performance relationship, we reconsidered previously published findings, uncovering relationships that a traditional mean-focused approach either would have failed to predict and detect, or would have required the identification of explicit intervening contingencies, finally resulting in a less parsimonious theoretical explanation.

Implications of Considering Outcome Variability

This study has important implications for scholars of groups and teams, as well as for practitioners managing and working in teams. Thinking broadly about outcome variability increases our theories' parsimony, precision, and validity. Regarding parsimony, considering outcome variability allows us—when appropriate—to take a more holistic perspective on relationships, focusing on the basic connection between factors. Because modeling effects on outcome variability, in effect, implies moderators without explicitly measuring them, it allows scholars to focus upon and emphasize the main effects that are often obscured as we specify more and more contingencies. This ability to predict variability increases theoretical parsimony while reducing demands on practitioners seeking to put our theories into practice. Furthermore,

²⁸ While much of the wording used to describe the dataset is similar or identical to that of the original study (Kilduff et al. 2000), it was however impractical to put quotes around all such citations.

such increased parsimony facilitates both greater understanding and our ability to integrate our theories into a cohesive model understanding of team processes.

Furthermore, considering outcome variability can provide greater explanatory power, allowing a more accurate understanding of a given relationship. In the case outlined in our illustration, the Kilduff et al. (2000) analyses found little effect of diversity on performance in the teams under study²⁹. Yet, our re-analyses show that there were such relationships but, rather than driving mean performance, diversity primarily drove performance variability, allowing us to predict the occurrence of extreme outcomes. In addition, such variability effects implied effects in the extremes that we were able to unearth in the additional exploratory analysis: for instance, age diversity would slightly improve performance on average; yet, because it reduces variability, it could also reduce occurrence of extreme success, which appeared clearly in this case (Figure 3.b). Similarly, even though no mean effect was detectable, positive effects of functional diversity on variability suggest the possibility of increased extreme outcomes, which also appeared clearly in this case (Figure 3.c).

Turning to practice, highlighting to managers the importance of considering not only mean outcomes but also outcome variability provides them with new managerial levers. As theoretical models become narrower in their focus and complex in their relationships, managers may find it increasingly difficult to apply scholarly findings to their particular contexts. In many instances, managers lack control over all the phenomena that we as scholars identify as driving success. By considering the drivers and effects of outcome variability, practitioners may discover that they can affect meaningful change in their organizations without specifically measuring or controlling for certain intervening moderating constructs (such as here for the social and informational hazards). For instance, in the early phase of this research, interviews conducted with the risk specialist of a major airline revealed that they operate based on the heuristic that mid-range diversity is preferable for safety purposes, even they acknowledge that no existing theory linked team composition to avoidance of accident in such way. Furthermore, they distinguish effect on average from those of extremes, and operate in a context where theory about accident would have to be robust to uncertainties of the field (hence, the perception that no theory could explain their heuristic). The findings of this study not only provide validation for their heuristic, but framed in a way that makes it robust to at least two typical hazards—social integration and informational fit.

When are Outcome Variability Effects Relevant?

An important question to consider is when it is most advantageous to examine effects on outcome variability above and beyond effects on means or even moderators. One might argue that mean performance aggregates what is occurring in the whole range of performance, as the huge upside of “blockbuster” cases should offset negative effects of failures; conversely, huge downside of catastrophic failures should offset benefits of moderate successes. However, we argue here that such offsets depend on the context, and, importantly, that considering outcome variability is not superior to the traditional focus on mean outcomes in all situations. Rather, it *complements* mean approach in contexts that would benefit of parsimonious theory (i.e. without assuming control of contingency) and where *risk preference* regarding team performance exists.

These findings suggest that extreme outcomes observed in some field studies may in fact be due to variability more than average—endangering their generalizability. This warning is an extension to both ranges of extremes of the concern expressed by Denrell (2003) and Kalnins (2007), which was then focused on how observing bankruptcies can induce biases in theory-building if one does not account properly for variability. Here, we suggest for instance

²⁹ As Kilduff et al. (2000) were not focusing on such effect but rather on reverse causation between cognitive diversity and performance, the current study therefore does not endanger their findings in any manner.

that, if in observing the factors leading venture teams to reach IPO in entrepreneurial contexts, one could find that age diversity decreases attainment of IPO, this might lead to a perception that diversity generally has a “detrimental” effect on venture team. However, considering outcome variability, this is an unwarranted generalization as the effect of age diversity on reaching extreme outcomes may have been only the reduction of informational hazard and therefore only a variability effect. The true generalized relationship that would apply to the whole outcome range is much more nuanced: on the mean, diversity seems to have a limited positive effect; on variability, diversity first has a negative effect, then a positive one.

Conclusion

In this paper, we demonstrate that examining the drivers of team outcomes variability can identify novel and potentially important relationships that are unavailable to mean analysis approaches, providing an important new lens on group dynamics. This variability-based approach produces parsimonious theory by subsuming moderating factors and therefore may be more accessible and manipulable by both researchers and practitioners looking to predict the effectiveness of teams. Our reanalysis (of Kilduff et al., 2000) allows us to identify several previously overlooked relationships, such as that between diversity and outcome variability: diversity decreases variability of outcomes in the low diversity range, but increases it in the high diversity range. Our results also help explain why current theories on team diversity have reached contradictory conclusions. Finally, our reanalysis illustrates the great phenomenological power of analyzing outcomes variability by showing that the same processes may be leading to both extremely positive and extremely negative outcomes. This would require those managing teams to focus primarily on their risk preference—their willingness or aversion to gamble on extremely positive or negative performance.

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Figure 1

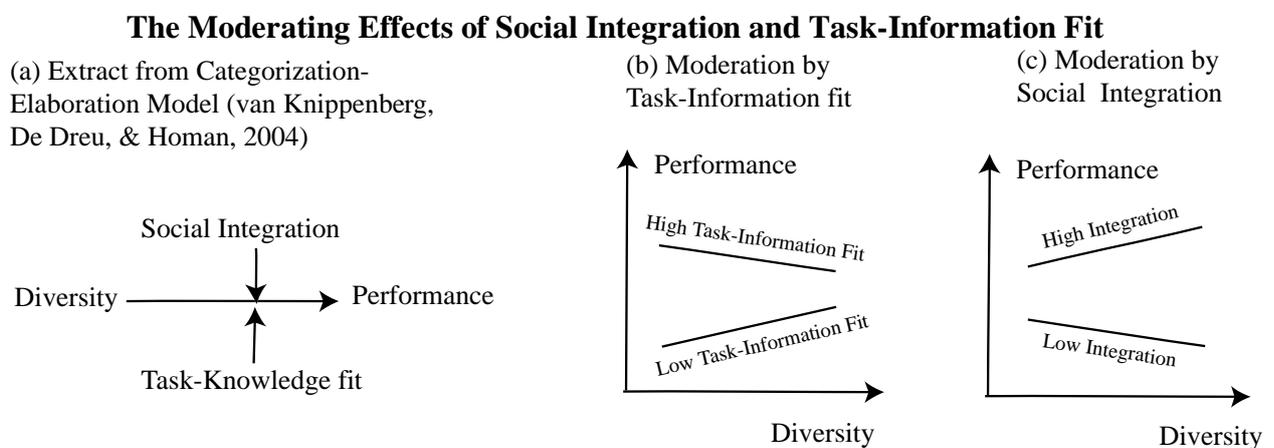


Figure 2

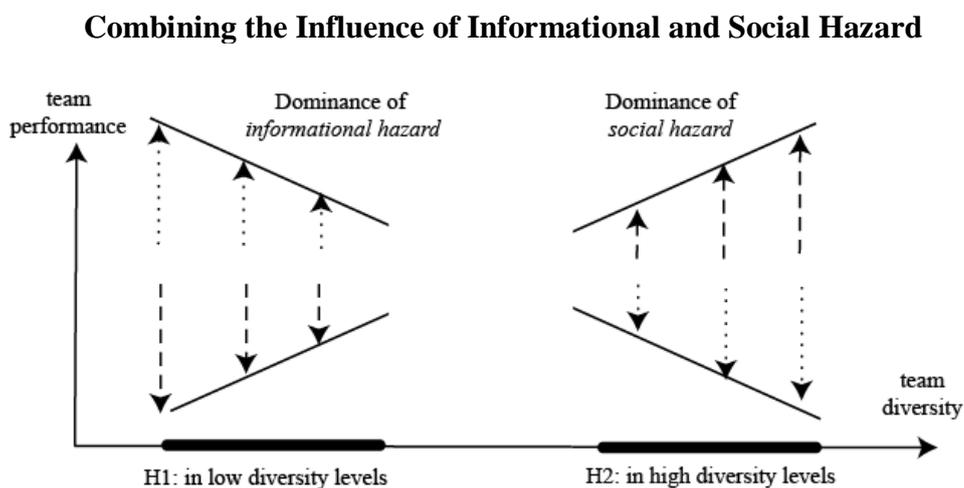


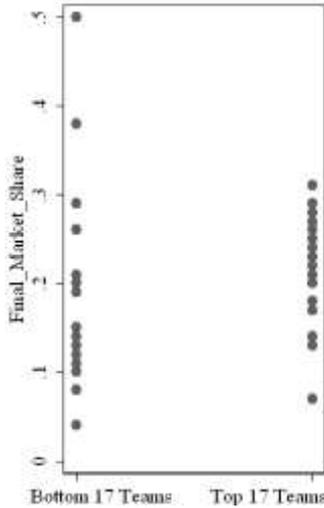
Figure 3

Plotting Variability Effects in Low and High Diversity

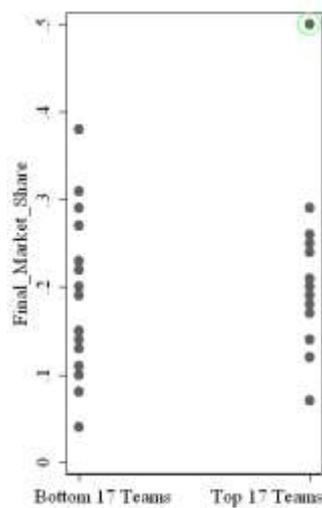
Hypothesis 1: Variables in relatively low diversity decrease performance variability

Hypothesis 2: Variables in relatively high diversity increase performance variability

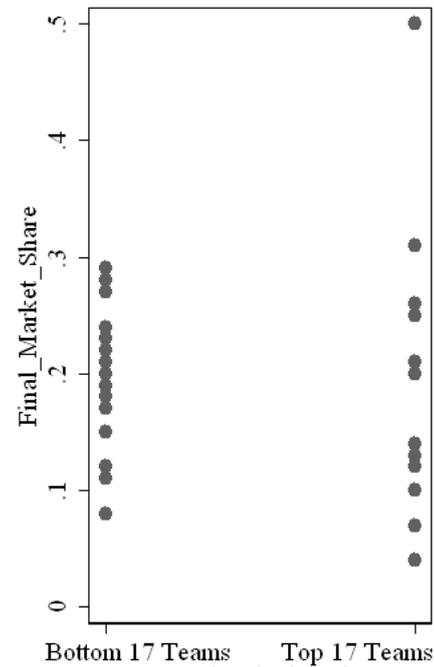
(a) Effect of National Diversity



(b) Effect of Age Diversity



(c) Effect of Functional Diversity



Note: Each graph is constructed by grouping the teams in two subsamples, separating the bottom and top values in the diversity variable (respectively National, Age, and Functional diversity).

The Development of Transnational Activities by Immigrant Entrepreneurs

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The Development of Transnational Activities by Immigrant Entrepreneurs

Abstract: Traditionally immigrant entrepreneurship distinguishes the necessity and opportunity immigrant entrepreneurs based on their characteristics. Despite the continuing debate about the motivations behind immigrant entrepreneurship, it remains unclear how self-employment differs from entrepreneurship for immigrants. To build upon our knowledge of how immigrant entrepreneurs develop transnational activities, this research addresses: *why do immigrants become entrepreneurs and link back to their home countries?* Drawing on Ethnic Middleman Theory and Theory of Practice, we focus on Chinese ethnic entrepreneurs in Australia given their significant entrepreneurial activities. We provide insights using a narrative analysis, and contribute to a much needed improvement in the theoretical explanation of immigrant entrepreneurship. We make several contributions. First, immigrant entrepreneurs actively pursue business opportunities in the home country and have intentions of business and/or product development; second, immigrant entrepreneurs overcome barriers by utilizing transnational linkages; and third, immigrant entrepreneurship is driven by both necessity and opportunity, which is interlinked around their personal *habitus*. Our findings show the complexity of these two types of immigrant entrepreneurship cannot be simply categorized based on the differences of these characteristics. Finally, we argue that necessity-based and opportunity-based entrepreneurship should be seen as interlinking concepts given the pervasive nature of people's perceptions.

1. INTRODUCTION

The convenience and frequency of cross-border flows of information, commodity, capital and people, represents the new era of globalization. Specifically, greater participation in trade and investment of Asian economies and the globalization of the world economy influence global mobility of capital, workers and professionals (OECD 2012). Hence, migration is an unavoidable part of globalization. This mobility of labour influences knowledge flows, network linkages, and financial transactions globally. For example, the total number of global migrants in 2010 was 214 million, representing 3 per cent of the world's population (OECD 2012). Historically, movements back and forth between countries have been a fact of life for many immigrant groups. This suggests transnationalism is "a process by which migrants, through their daily activities and social, economic, and political relations, create social fields that cross national boundaries" (Basch, Schiller & Blanc 1994, p. 22). Given increasing globalization and scale of transnationalism, little is known about how transnationalism impacts immigrant entrepreneurs' international activities. There are a number of controversial issues that remain open for debate about our current understanding of transnationalism and transnational entrepreneurship that have been studied in recent entrepreneurship and migration research. For example, it is not always clear what underpins the formation of transnationalism and what kinds of practices should be considered as transnationalism (Bagwell 2014). Entrepreneurship refers to the willingness and capability to convert a new idea or invention into a successful innovation (Schumpeter 1934); whereas entrepreneurship nowadays is understood as the process of starting businesses, which is recognized as the major driver for economic growth in many developed economies (Reynolds et al. 2003). Research on transnational entrepreneurship sheds light on the context of immigrant entrepreneurs and why and how entrepreneurs pursue new business ventures while relying upon the resources in their home and host countries (Drori, Honig & Wright 2009). Traditionally immigrant entrepreneurship has been seen as necessity driven, which means immigrants have no choice other than to develop their own businesses (Reynolds et al. 2003). However, more recent studies in immigrant entrepreneurship suggest that immigrant entrepreneurs tend to be driven by opportunities rather than by life necessity (Lin & Tao 2012; Zolin & Schlosser 2013). Despite the continuing debate about the motivations behind

immigrant entrepreneurship, to the best of our knowledge it is still unclear how self-employment differs from entrepreneurship for immigrants (Aldrich & Waldinger 1990; Levie & Smallbone 2009). This study will address this problem by exploring the following research question: *why do immigrants become entrepreneurs and link back to their home countries?* The structure of our paper is as follows. First, the theoretical underpinnings and literature review will be discussed to provide a theoretical lens for our study. We then outline the research context of this study, namely Chinese immigrant entrepreneurs in Australia, since China is the largest source country for migrants in Australia; well known for their entrepreneurial activity; and their increasing contribution to the Australian economy. It is surprisingly under researched. This study will focus on first generation Chinese immigrant entrepreneurs in Australia, given the complex nature of generational influences on network formation. The reasons for focusing on this group are four-fold. First generation migrants have characteristics, acquired from their home country, that are distinctly different from Australian born Chinese. Second, immigrant entrepreneurs' prior experience in the home country allows them potentially more access to certain resources in that context. Third, the motivation for migration has been acknowledged as an important factor in understand immigrants' post migrate activities (Baltar & Icart 2013; Lin & Tao 2012), whereas the Australian born Chinese are not affected by this. Finally, first generation immigrants are experiencing first-hand the adaptation process and development of positions in Australia, which Australian born Chinese individuals do not face to the same extent. Therefore, this study will address this distinct group of immigrants. We provide findings and discussion. Finally, contributions to several literature streams and theoretical areas are offered, highlighting the significance of this study.

2. LITERATURE REVIEW

2.1 Theoretical Underpinnings

Three theories have been predominately used in past research on immigrant entrepreneurship studies. These are the Cultural Theory (Light 1972), Social Network Theory (Granovetter 1973), and Mixed-embeddedness Theory (Kloosterman, Leun & Rath 1999; Kloosterman 2010). Cultural theory argues that some immigrants tend to be more entrepreneurial than others due to their sociocultural background (Light 1972). Cultural theory is also used to focus on the limitations and hurdles facing immigrants. For instance, immigrants are seen as having a disadvantaged position in the host labor market due to language, education credentials and discrimination, among other factors. The Social Network Theory focuses on how social ties facilitate or constrain individuals' resources and behaviour. In this sense, it explains the flow and exchange of information and resources between connected individuals. The Mixed-embeddedness Theory suggests individuals are influenced by the surrounding social, economic and political environment which allows and/or constrains their interaction with opportunities. Thus, the latter theory argues that immigrant entrepreneurship study needs to take into account the micro- and macro- structures because of their considerable impact (Kloosterman, Leun & Rath 1999; Kloosterman 2010). Each theory has been used to explain some issues and phenomena in immigrant entrepreneurship and generally touch on the phenomenon of transnational entrepreneurship. However, they cannot fully explain the research question identified in this study, which aims to develop a deeper understanding of why immigrants partake in entrepreneurship and how they practice between home and host countries. More importantly, these theories, on their own, do not address immigrant entrepreneurs' subjective views, which are highly influential in their decision-making process. Hence, this study draws on two specific theories from the field of sociology, namely, the Ethnic Middleman Theory (Blalock 1967; Bonacich 1973) and the Theory of Practice (Bourdieu 1977; 1986).

Ethnic Middleman Theory

The concept of “middleman minorities” was initially developed by Blalock (1967:70-84). It was applied to groups of immigrants such as the Chinese in Southeast Asia, the Jews in Europe, and Indians in East Africa. Middleman minorities are defined as those ethnic entrepreneurs who trade between home and host societies (Blalock 1967; Bonacich 1973; Drori, Honig & Wright 2009; Zhou 2004). Hence, the advantage of the Ethnic Middleman Theory is that it generalizes the identity of a certain group of immigrants regardless of the differences in their races and nationalities. The Ethnic Middleman Theory (Blalock 1967; Bonacich 1973) identifies that groups of immigrants around the world have similarities regarding the intermediate role for their social and economic interactions in the host country and/or between the home and host countries. Despite the beneficial explanation of the Ethnic Middleman Theory (Blalock 1967; Bonacich 1973) for immigrant entrepreneurship, it has been employed for immigrant entrepreneurship studies in only one context, normally in the host country. In addition, it has yet to be comprehensively applied to transnational entrepreneurship studies.

Theory of Practice

Bourdieu’s (1986) theory of practice is essential to understanding transnational entrepreneurship as it links individuals to the contexts in which they are embedded. Three key concepts are fundamental to this theory, including habitus, field, and capital (Bourdieu 1986). Bourdieu’s theory assumes individuals, with their own dispositions (*habitus*), are located in certain social fields. The social field, or market, is also a structural space that has its own objective rules and modes of behaviour. Dispositions are the *habitus* of individuals which refers to everyday habitual practices and their cognition of their actions. However, an individual with their dispositions may not be able to act successfully in the social field. Therefore, individuals have to employ sufficient capital (whether it be economic, cultural, social, and/or symbolic capital) for enhancing their activities in the given social field. Capital resources can be defined in four ways. Economic capital “refers to money and other material possessions that hold immediate economic value”. Social capital comprises “the relationships or network ties held”. Cultural capital includes “education, experiences, and learning attained”. Finally, symbolic capital includes “legitimacy or credibility held by an individual” (Terjesen & Elam 2009, p. 1104). Different forms of capital are closely linked with individuals’ dispositions, which thereby help to explain the practical and psychological context of their actions (Bourdieu 1986). Thus, different types of capital are characterized not only as agents but also as resources that enable individuals to interact within their social fields. However, there is insufficient application of the Theory of Practice that would assist explanations of dual contexts for transnational entrepreneurial activities in future research and the development of transnational activities in immigrant entrepreneurship (Terjesen & Elam 2009).

An intrinsic characteristic of transnational entrepreneurs is their immigrant identity in the host society. Therefore, a review of the literature on immigrant entrepreneurship will help us to understand the similarities and differences among immigrant entrepreneurs. Literature drawn from international entrepreneurship will also help us to understand transnational entrepreneurship in the global context.

2.2 INTERNATIONAL AND IMMIGRANT ENTREPRENEURSHIP LITERATURE REVIEW

2.2.1 International Entrepreneurship and International Opportunity Identification

International entrepreneurship is a “combination of innovative, proactive, and risk-seeking behaviours that crosses national borders and is intended to create value in organizations” (McDougall & Oviatt 2000, p. 903). The emergence of international entrepreneurship is associated with research on entrepreneurship and international business (IB). Most international entrepreneurship studies place attention on the firm as the unit of analysis, since international entrepreneurship was developed from the study of corporate entrepreneurship (Knight & Cavusgil 1996) and born-global firm literatures (McDougall & Oviatt 2000). While corporate entrepreneurship refers to international entrepreneurial behaviour in large, established companies; born-global firm literature refers to new and young ventures seeking early internationalization. Thus, the focus of international entrepreneurship studies is on the group and company levels of analysis (Honig & Drori 2010). For decades, international entrepreneurship research has been associated with the concepts of born-global firms and the process of their internationalization. Recent empirical research has tried to explain how these new and young ventures access information and resources, which influences their opportunity identification (Ellis 2011), market selection (Smans, Freeman & Thomas 2013) and utilizing their international experiences in a complex IB environment. Nevertheless, the concern with research in international entrepreneurship is that it focuses on how entrepreneurs develop international networks and ties, without considering their migration history.

A prevalent trend in international entrepreneurship studies is the international opportunity identification process. An international opportunity is defined as “the chance to conduct exchange with new partners in new foreign markets” (Ellis 2011, p.101). Opportunity identification is an essential focus for entrepreneurship research since it is one of the most important abilities of successful entrepreneurs. Recent international entrepreneurship studies have recognized the importance of social ties in terms of market entry and international opportunity identification (Ellis 2000, 2011). Ellis (2011) suggests that international opportunities are discovered by entrepreneurs through their tie-based relationships. Individuals are the carriers of networks and social ties, which influence people’s international activities and operations, especially when these network carriers live or work in different countries (Chen & Tan 2009). Although social ties are meant to link individuals, the importance of people’s living and learned experiences with regard to the establishment of these social ties has not yet been extensively explored in international entrepreneurship studies. Hence, international entrepreneurship studies underestimate the context of immigrant/transnational entrepreneurship and their ties. Thus, ethnic entrepreneurship research provides some fundamental information on immigrant entrepreneurship, especially with regard to the source of their social ties (Portes, Guarnizo & Haller 2002).

2.2.2 Ethnic Entrepreneurship and Economic Adaptation

Ethnic entrepreneurs are individuals whose group membership is tied to a common cultural heritage or origin, and are known to out-group members as having such traits (Kloosterman, Leun & Rath 1998). It is suggested that immigrants in host countries are more likely to be self-employed (i.e. entrepreneurs) due to their inability to participate in the mainstream economy (Light 1972), whereas in sociology they are not perceived as different. Excluded from the mainstream economy, these ethnic entrepreneurs rely on their ethnic ties and networks for securing further resources (Lin & Tao 2012). Ethnic entrepreneurship literature introduces two main types of ethnic entrepreneurs; middleman minorities and enclave

entrepreneurs. There are fundamental differences between these two types of entrepreneurs. Middleman minorities are entrepreneurs who take advantage of their ethnic resources for trading between elites and masses, of home and host societies. These entrepreneurs have social ties with both ethnic and non-ethnic groups in which they conduct economic exchanges. On the other hand, ethnic enclave refers to those entrepreneurs who simply rely on supply and demand, mainly from ethnic ties (Honig & Drori 2010). Thus, ethnic entrepreneurial activities are deeply embedded in ethnic community networks (Honig & Drori 2010) in immigrant host countries and societies with little consideration of international connections and business opportunities. Nevertheless, ethnic entrepreneurship studies underestimate the role of transnational entrepreneurs, who are practicing as middlemen internationally (Terjesen & Elam 2009).

Studies of immigrant entrepreneurship traditionally focus on the migrants' economic adaptation and social assimilation (Berry, Kim & Boski 1988) in their host countries. Lin (2010) distinguishes the differences in immigrant economic adaptation and social embeddedness among different groups of immigrant entrepreneurs, including wage employment, ethnic economy, returnee businesses, and transnational entrepreneurship. While there is some discussion in the literature of the underlying motivations for ethnic entrepreneurial behaviours, most ethnic entrepreneurship studies associated with migration studies have focused on the economic adaptation of immigrants to receiving societies (Portes, Guarnizo & Haller 2002). Thus, our understanding of ethnic entrepreneurship is centered on the sociological perspective. However it lacks the business perspective and 'entrepreneurship' itself has been overlooked in ethnic entrepreneurship studies (Drori, Honig & Wright 2009). For instance, it is still unknown how immigrants become involved in transnational business practices.

2.2.3 Transnational Entrepreneurship and Dual Embeddedness

Transnational entrepreneurs are generally defined as immigrants who are engaged in cross border business activities involving their country of origin or other locations (Portes, Guarnizo & Haller 2002). Immigrant entrepreneurs undertake opportunities for bi-national business and benefited from their transnational linkages, which refers to "a person's knowledge of a culture, language and market in both the host country and homeland" (Baltar & Icart 2013, p. 201). These transnational linkages facilitate access to the resources that are needed from and through these immigrant entrepreneurs. Although transnational linkages are naturally evolved and developed after immigrants migrate from one country to another, the usefulness of transnational linkages still remains an unnoticed aspect of immigrant entrepreneurship (Portes & Yiu 2013). In addition, transnational entrepreneur is acknowledged with the feature of 'dual embeddedness' (Drori, Honig & Wright 2009). Uzzi (1997) defines this embedded relationship as a unique logic of exchange, which allows business actors to share their learning, problem-solving, and risk-taking within a long-term strategy. In addition, Jack and Anderson (2002, p.48) find that the process of embedding requires developing "the nature, depth, and extent of an individual's ties into the environment". Based on this definition of embeddedness, dual embeddedness means that individuals have certain extents and depths of ties in two or more environments. This requires transnational entrepreneurs to have the capability to overcome difficulties as well as to explore the opportunities. As such, it is clear that successful transnational entrepreneurs practice their business dually embedded, that is, in both their home and host countries. However, it is not explained clearly how these entrepreneurs achieve and maintain dual embeddedness. Hence, achieving dual embeddedness exposes transnational entrepreneurs to dual social and institutional contexts and understanding how they accept dual dimensional

social interactions is not clear. Therefore, to address the gaps in the literature, this study will explore the proposed research question: *why do immigrants become entrepreneurs and link back to their home countries?*

3. METHODOLOGY

The present study adopts the critical theory paradigm as a philosophical guide. Critical theory paradigm suggests that there is a 'reality' that is apprehendable and researchers cannot be separated from the knowledge (Guba & Lincoln 1994). Moreover, critical theory paradigm is based on a historical ontology which assumes that the reality is created and shaped by social, political, cultural, economic, ethnic and gender-based forces that have been crystallized over time into social structures that are taken to be natural or real (Guba & Lincoln 1994). A qualitative approach is adopted for this study since entrepreneurship is a relatively young field characterized by process, which needs close analysis (Davidsson 2005). A transnational perspective of immigrant entrepreneurship, which involves more than one cultural and social contextual aspect, is also an emerging field. This study will look at the experiences of immigrants that need to be narrated from their previous and current experiences and, hence, focuses on the individual level of analysis. This kind of study into highly-complex, context-specific phenomena and processes, requires a qualitative approach, which will provide insight into human behaviour and an explanation of how and why the phenomenon is happening (Yin 2009). Thus, the research context will be introduced in the following section.

Transnational entrepreneurs have attracted considerable attention from scholars due to their growing economic and social impact in a number of developed countries, such as the United States (US), the United Kingdom (UK), and Canada (Baltar & Icart 2013; Lin 2010; Portes & Yiu 2013). It is also suggested that transnational entrepreneurs will have a greater influence on future economic growth for countries in immigrant-based societies (Levie & Smallbone 2009), given their increasing participation and the intermediary roles they play in IB activities (Terjesen & Elam 2009; Chung & Tung 2013). To date, the majority of transnational entrepreneurship studies have been conducted in the USA, Canada and European countries. There is little research from Australia, which is surprising given the changing nature of their long history of immigration, initially European, but now one of the most sought after migrant destinations within Asia (Levie & Smallbone 2009).

3.1 Data Collection and Data Analysis

We conducted 4 in-depth case (firm) studies, drawing on 8 in-depth interviews with entrepreneurs and industry experts, to address the exploratory, contemporary and complex nature of the research question (Yin 2011). The main data collection draws on in-depth, semi-structured interviews. Our interview protocol was guided by the critical incidents method (Miles & Huberman 1994), thus, it includes a list of open-ended questions. This approach enables researchers to capture the context of immigrant entrepreneurs and how their experiences from both the home and host countries affect their decision-making in terms of starting and operating businesses. In addition, it allows us to capture the topics that emerge during the interview. Interviewees were asked about their business activities in Australia and China based on their own experiences. Supplementary insights from secondary data were collected through websites, newspapers, and social media, in order to build multiple individual database (Yin 2011). Further supplementary analysis also included in-depth interviews with 3 industry informants, which were selected based on their knowledge of and experiences with Chinese immigrants in Australia. All interviews lasted 1-2 hours and were tape-recorded and transcribed. Four cases form the primary evidence of the paper. The first case is a former international student (Jacky), who migrated after completing his bachelor study in Australia and started a business with wine exporting to China. The second case is a

skilled migrant (Wu), who initially worked at an Australian construction firm, then started his own business in trading and his product relates specifically to construction. The third case is a business-skilled migrant (Christina), who started an education consulting firm (for overseas students in Australia and China) after a few years of voluntary consulting experience at an Australia government department. The fourth case is a business-skilled migrant (Mike) who is involved in a business project to develop the Chinese market for an Australian product. In addition, interviews with 3 informants were sourced from the Australian and Chinese Business Network, Overseas Chinese Association of SA (South Australia), and Government officials, to accomplish this study with a holistic and comprehensive view, both within and outside the cases, as well as to implement a triangulated methodology design.

Guided by the research protocol, research themes were continually refined in the analysis, which evolved throughout the data analysis process. The data from the transcripts and case studies were coded and analyzed systematically through thematic analysis and open, axial and selective coding (Yin 2011). Following suggestions from Miles and Huberman (1994), researchers went through the following processes: (1) data reduction (organizing and reducing the mass of data through writing summaries and discarding irrelevant data); (2) data display (creating figures and tables for making conclusions); and (3) verifying the initial conclusions through further data collection. The emergent themes were found to be consistent throughout the cases in the study suggesting the findings are not influenced by researchers' bias. To guarantee construct validity, triangulation was conducted with both researchers to cross-check the accuracy of coding and to minimize the bias of data interpretation.

4. FINDINGS

Analysis revealed not only that immigrant entrepreneurs are pushed into business sectors due to their limited choices of occupations, but also that they have strong motivations in seeking business opportunities, having the intentions of business and/or product development and utilizing transnational linkages to overcome barriers in the (host) country.

4.1 Aspiration of Opportunity-Seeking

Our findings reinforce the recent literature in immigrant entrepreneurship, particularly on the emergence and motivation of immigrant entrepreneurship. Generally, entrepreneurship is categorized as either necessity-based or opportunity-based (Reynolds et al. 2003). Immigrants are often seen as pursuing necessity-based entrepreneurship since they find it very difficult to enter the mainstream economy and when there are few better employment choices other than taking ownership of businesses (Light 1972). Recent studies (Lin 2010; Lin & Tao 2012; Portes & Yiu 2013; Zolin & Schlosser 2013) found that skilled immigrant entrepreneurs have the advantage of identifying international opportunities, leveraging resources across borders, and starting international new ventures, which challenge the traditional view of passive necessity-based immigrant entrepreneurship. In addition, Lin and Tao (2012) found that opportunity-seeking is one of the motivations for some Chinese entrepreneurs migrating to Canada. Chrysostome (2010) distinguishes the necessity and opportunity immigrant entrepreneurs based on their characteristics, including age, gender, education background, language, source of capital, targeted market, and level of integration. As a result, Chrysostome (2010) finds that the necessity immigrant entrepreneurs are less skilled with limited professional experience, and their networks tend to be limited to their ethnic community, while the opportunity immigrant entrepreneurs have the opposite characteristics. However, our findings show the complexity of these two types of immigrant entrepreneurship, which cannot be simply categorized based on the differences of these characteristics. Instead, highly educated and experienced immigrants are still in the disadvantaged position for finding jobs relevant to their specialty or to continue businesses in

their previous industry, which eventually pushes them to look for alternatives. Explained in our case study 1, Jacky changed his jobs (previously an accountant) due to the dissatisfaction in working for two Australian firms. He touched on several fields and finally found himself in a satisfying position in a wine business trading between Australia and China. Three out of the four entrepreneurs in our cases are managing businesses that are not linked with their previous specialization. Furthermore, all interviewees across the 4 cases mentioned that entrepreneurship gave them personal satisfaction. Notably, these immigrant entrepreneurs have positive attitudes to cope with the obstacles and dis-satisfactions in the opportunity structure in the host country (Aldrich & Waldinger 1990) and have strong aspirations to seeking opportunities and become an entrepreneur. Therefore, in line with and building on some recent studies (Lin & Tao 2012; Zolin & Schlosser 2013), our study suggests that skilled Chinese immigrants in Australia have the willingness to commit to business and are actively looking for business opportunities that can achieve actualization.

Mahuteau et al (2014) found that the newly adopted stricter migration policy in Australia (from the 1st July 1999) with higher requirements (on skill, age, and English ability) selects more highly skilled immigrants who tend to be self-employed after migration. This study reveals significant marginal effects of the stricter migration policy on business visa sub-class, which is 18% higher than previously.. Although business migrants tend to be entrepreneurs after migration (Mahuteau et al 2014), we find a striking obstacle facing the opportunity immigrant entrepreneur in the host country. It is particularly difficult for experienced business migrants to directly transplant their business skills and knowledge from China to Australia. Louise (industry expert) worked for a business network association, and was particularly involved in the networking with business migrants. Louise indicated that:

“Many business migrants suffer from their first investment or business, they enter business category in Australia quickly because that is the requirements from migration policy for business visa. So, often these business migrants need to wait for few years to find a profitable business opportunity” (Louise, Industry Expert)

Further evidence is provided by two interviewees who were business migrants. Christina, (case study 3) came to Australia as a business migrant with rich professional experience in international business. She was passionate about finding business opportunities and proposing business projects in the first few years after migration. As she said:

“I was a successful entrepreneur before migrated to Australia. I am always enthusiastic about doing business and I was very good at it... I tried to use the knowledge that I had to do business here but it was not easy. I proposed 7 business projects after I came here, but all of them failed. That was a huge frustration to me and I was depressed because I could not accept the change of my status and failure of business” (Christina, Entrepreneur)

Another business-skilled migrant, Mike (case study 4), who had 15 years experiences in the car industry in China; is currently dealing with an Australian paint product after his migration. As Mike said:

“I do not speak English and I stayed with many Chinese friends when I just came. I was looking for business opportunities since I came to Australia in 2009 but I did not have a good understanding of local industries” (Mike, Entrepreneur)

Thus, there is still a considerable disconnection of skilled migrants’ specializations before and after their migration and entrepreneurial activities in Australia. Our findings build on Mahuteau et al (2014) revealing the added difficulties faced by experienced and skilled

migrants in Australia, which need to be explored and understood in order to avoid wasting their established knowledge and connections in home country.

4.2 Intention of Business and Product Development and Future Orientation

Self-employment and entrepreneurship have been used interchangeably in current immigrant entrepreneurship literature; in particular, current immigrant entrepreneurship literature does not address the difference between self-employment and entrepreneurship. Our findings suggest that immigrant entrepreneurship is different from immigrant self-employment, which should not be measured simply by whether they have the willingness to take on business ownership. Rather, immigrant entrepreneurs differ strongly from immigrant self-employed in how they perceive their business development. One informant worked closely with immigrant business owners in his role as a small business adviser. He observed that:

“...these immigrants are different. Some of them do homework ahead and ask me questions with plans in mind... They are keen to work on improvements for a better product or service... they think ahead and plan for further” (Tom, Industry Expert)

This distinct aspect is confirmed in interviews with entrepreneurs. For example, Jacky (case study 1) introduced his new products for the Chinese market:

“We produced a new type of beer with fruity flavor. This product is only produced for the Chinese ladies. We estimate that ladies will drink it as a fashionable choice after seeing some ladies drinking it. The reason we designed this is that we want to develop and gain the market for ladies in China... it has been a tradition that alcohol is dominated by men” (Jacky, Entrepreneur)

Wu (case study 2) owns a factory in China and sells his product in Australia. He developed two more products after successfully introducing his first product in Australia. As he said:

“I saw the existing products in the Australia market... not pretty and very expensive. I wondered how to make similar products with lower price and better materials. Then I found a material invented in Canada, so I brought the technology to my factory and made prettier and affordable products for Australian consumers” (Wu, Entrepreneur)

In addition, Mike (case study 4) revealed his perception of introducing an Australian brand to the Chinese market:

“I took this Australian brand to China and worked on it for 5 years and I am still investing in the brand development. Also I need to work on the distribution channel development and anticipate possible circumstances after 5 years or even 10 years” (Mike, Entrepreneur)

Christina (case study 3) also revealed her current plan:

“...more competitors enter this industry now, I am changing my strategy to get into a different market” (Christina, Entrepreneur)

Therefore, our findings build on studies (Lin & Tao 2012) to describe the characteristics of immigrant entrepreneurs, namely: enthusiastic not only in entering businesses, but also in pursuing improvements to their business and/or product with a long term view. Thus, immigrant entrepreneurship differs from immigrant self-employment given these aspects, which need to be further explored in immigrant entrepreneurship study.

4.3 Utilizing Transnational Linkages

Studies from sociology recognize that immigrants chose different economic adaptation approaches to settle in the host country, which reflect different degrees of social integration. Some of them take the advantage of their bi-national knowledge and skills, known as transnational linkages, for the purpose of economic adaptation (Portes Guarnizo & Haller 2002; Portes & Yiu 2013; Zhou 2004). Lin (2010) proposes a framework to distinguish the differences between wage employment, ethnic economy, and transnational entrepreneurship. Wage employment refers to immigrant employment in the mainstream economy in the receiving countries (Lin 2010). While these groups of immigrants are seen as the reflection of assimilation in the host country, research shows this group of immigrants has little growth in western countries (Lin & Tao 2012). An ethnic economy is defined as the various types of businesses that are owned or controlled by co-ethnic owners (Light 1972). In this framework, the ethnic economy is less integrated in both the home and host countries compared to transnational entrepreneurship. Thus, transnational entrepreneurship is seen as not related to the ethnic economy. Despite the differences among these business types, Bagwell (2014) evaluates the transnational involvement of immigrant enterprises based on the input of these businesses, and the study finds that most immigrant-owned businesses could not easily be classified as distinct business types, such as ethnic economy, and transnational business. Instead, Bagwell (2014) argues that immigrant enterprises have different degrees of transnational involvement. Immigrants have transnational linkages, as they understand culture, language and market in both the host country and homeland (Baltar & Icart 2013). As Portes and Yiu (2013) point out, the transnational linkage is a characteristic that has been neglected in previous immigrant entrepreneurship studies. Our findings extend our understanding by exploring how transnational linkages relate to immigrant entrepreneurial activities. One of our informants explained how lack of understanding of Australia could affect Chinese immigrant entrepreneurs:

“...immigrants who know better about local people and how people behave would suffer less from challenges, like misunderstanding and disputes when they try to do business after arriving” (Linda, Industry Expert)

How understandings of home and host country affect immigrant entrepreneurship is also revealed by entrepreneurs. Mike (case study 4) does not speak English although he is developing the Chinese market for an Australian product. The language barrier allows only indirect communication for him and his Australian partner through translators. However, his understanding of China provides him with an advantage for his current business. Mike described himself as in a position to utilize his knowledge to explore the Chinese market:

“We see Australians go to China and Chinese come to Australia quit often nowadays. It is certainly good for Chinese and Australian business people to understand each other and the markets. But I think the mutual understanding is still very weak. The weakness in the in-depth knowledge enables a space for people like me to do business” (Mike, Entrepreneur)

Similarly, Wu (case study 2) stated that his understanding of business etiquette and values for both Chinese and Australian people assisted him to set up a factory with his Chinese technicians in China. In addition, he manages good relationships with his Australian business partners for product distribution in Australia. Wu realized that his knowledge is an advantage compared to other business people in the same industry:

“...the Chinese producers do not know the Australian standard, so they were not able to entry the Australian market without me...” (Wu, Entrepreneur)

Jacky (case study 1) explained how he is partnering with Australian wine makers, as he says:

“Most of the wine producers roughly know the demand and preferences of the Chinese consumers. For example, they know that Chinese like sweeter flavor, or Chinese consumers like the red color for bottling... But what they could not get is the cultural meaning in details. Let me show you some examples... Here are two bottles of wine with same taste and quality, but one bottle has cock and another one has whorl cover. A Chinese consumer very likely will drink the one with whorl cover within family members but drink the one with cock to host guests. Why is that? This is our culture that a better presentation saves the face” (Jacky, Entrepreneur)

As such, transnational linkages facilitate immigrant entrepreneurs to successfully operate in the host country, and develop further business activities between the home and host countries. Therefore, aligned with a few recent studies (Baltar & Icart 2013; Portes & Yiu 2013), our findings confirm transnational linkages as an important aspect of immigrant entrepreneurship, and this aspect provides advantages for immigrants to successfully participate in transnational businesses instead of staying in a disadvantaged position in the host country. In addition, building on Chung and Tung (2013) suggesting immigrants assist host country SMEs enter immigrants home market, our findings further explain that these immigrants who utilize their transnational linkages benefit host country SMEs by mentoring SMEs in the complex meanings of the consumer demands in order to capture further market share.

5. DISCUSSION AND CONCLUSION

Immigrant entrepreneurship has been seen as necessity driven, while recent studies (Lin 2010; Lin & Tao 2012; Portes & Yiu 2013; Zolin & Schlosser 2013) found that skilled immigrant entrepreneurs have the advantage of identifying international opportunities, leveraging resources across borders, and starting international new ventures, which challenge the traditional view of necessity immigrant entrepreneurship (Light 1972). Existing literature in immigrant entrepreneurship extensively discussed how immigrants overcome difficulties and take business ownership, without successfully distinguishing between self-employment and entrepreneurship for immigrants (Aldrich & Waldinger 1990; Levie & Smallbone 2009). To address this gap, this study explores the emergence and motivation of immigrant entrepreneurship by asking why immigrants become entrepreneurs. Our findings show that skilled migrants still face difficulties in relocating their expertise from their home country to the host country (Light 1972), which prevented them from directly transplanting their knowledge and skills in host country. Moreover, this study found that the skilled immigrants not only actively adjust themselves into a new environment, but also have strong aspiration for opportunity-seeking. Theory of Practice (Bourdieu 1986) helps to explain immigrant entrepreneurship which is an on-going interaction process between immigrants and their surrounding environment for adjusting and opportunity-seeking in one or two contexts. We also found that there is no clear cut distinction between necessity and opportunity-based reasons for immigrant entrepreneurs to start their own businesses, and that the motivation for entrepreneurship relates strongly to subjective views of the entrepreneurs, that present differently from person to person. This finding reflects the concept of *habitus*, introduced in Theory of Practice (Bourdieu 1986). *Habitus* refers to the individual's cognition that guides their reaction to the environment. Our findings show the importance of individuals' cognitive thinking, *habitus*, as it explains how immigrant entrepreneurs pass through barriers, pursue businesses, and utilize their advantages. Our analysis shows that necessity and opportunity are not perceived separately as is the received view in immigrant entrepreneurship studies. This study advocates a new theoretical view that links subject and object, to explain the

motivations of immigrant entrepreneurship in an individual level. The following framework (Figure 1) illustrates our theoretical view of immigrant entrepreneurship.

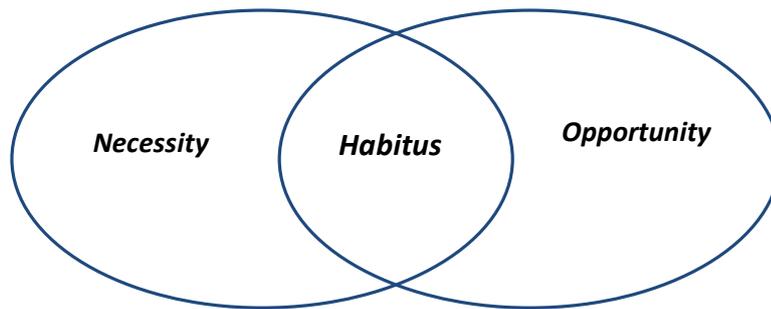


Figure 1. Motivations and Outcomes of Immigrant Entrepreneurship

As Ethnic Middleman Theory (Blalock 1967; Bonacich 1973) explains, transnational entrepreneurs have access to ethnic and non-ethnic resources, and our findings extend this theory to describe the role of transnational entrepreneurs between home and host countries. Rather than being middlemen to take advantage of opportunities between ethnic and non-ethnic resources, immigrant entrepreneurs utilize their transnational linkages to play a middle person's role in mentoring people from both sides. A new theoretical view (Figure 1) to support understanding of the motivations for immigrant entrepreneurship at the individual level identifies necessity and opportunity as interlinking motivations rather than as separate concepts. In addition, our findings show that an individual's *habitus* is embedded in both necessity and opportunity motivators, which should not be neglected in immigrant entrepreneurship study. Our study explores immigrant entrepreneurs' *habitus*, particularly of those involved in transnational activities: opportunity-seeking, intentions of business and/or product development, and utilization of transnational linkages. We suggest further exploration of the opportunity immigrant entrepreneurs' *habitus* in order to better understand the drivers, needs and contributions of immigrant entrepreneurial activities, which would benefit both home and host countries.

In conclusion, this study recognizes the active entrepreneurial involvement of Chinese immigrant entrepreneurs in Australia and existing barriers for skilled migrants. Findings indicate that transnational linkages enable Chinese immigrant entrepreneurs to pursue transnational businesses and follow their capitalist ambitions. In particular, China's dramatic economic growth provides 'space' and expression for Chinese immigrant entrepreneurs, who have the endowments and ability to draw resources from dual locations. This study contributes to the current literature on international business and immigrant entrepreneurship by drawing on theories and methods from the field of sociology. Theoretically, this study explores the characteristics of skilled immigrant entrepreneurs and why they utilize their transnational linkages, by drawing on theories from sociology. More importantly, this study proposes a new theoretical understanding of the links between necessity and opportunity drivers for understanding the motivations behind immigrant entrepreneurship. In addition, this study provides empirical evidence about Chinese ethnic entrepreneurs in Australia. Chinese ethnic entrepreneurs actively engage in various business ideas within the opportunity structure (Aldrich & Waldinger 1990) in Australia. Thus, it is useful to recognize their active engagement and capacity for operating between China and Australia, and for analyzing and supporting positive outcomes for Australia's economy growth and local employment. This

study makes a practical contribution for Australian SMEs by advising them on how to build reliable relationships with Chinese ethnic entrepreneurs for seeking and implementing low-risk international market entry and how to learn about the potential market (Chung & Tung 2013). Additionally, this study suggests that the Australian government should utilize local resources to build trade and social relationships with China. Finally, this study also provides useful information on decision-making for migrants who would like to start businesses in their host country and/or between their home and host countries.

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Title: Entrepreneurial Networking and Foreign Market Entry Decision- Making

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Entrepreneurial Networking And Foreign Market Entry Decision- Making

ABSTRACT

While entrepreneurship is considered in many countries to be an important way to create employment and socio-economic and technological progress, we have little theoretical understanding of how entrepreneurs make decisions about which foreign markets to enter. In particular, alternative decision paths pursued by SMEs (irrespective of whether they internationalise gradually or early) in their pre-internationalisation and key factors impacting such decision paths remain unexplored. Similarly, network relationships are critically important for SMEs that are typically known for their 'resource poverty' in their internationalization efforts. We study the decision making process for small and medium size enterprises (SMEs) foreign market entry (FME) by examining the process during pre- and post- internationalization. We identify their mode of FME and how networks influence market and technological learning as the firm progresses from first FME to their last three FMEs. We use in-depth qualitative research of one high-tech SME. While we found two different decision-making processes for FME this can shift as the firm progresses with internationalization. Networks play an important role in decision making as they help develop innovative products and gain access to foreign markets.

INTRODUCTION

The purpose of this paper is to integrate recent advancements in entrepreneurship theory to better understand the decision processes of small and medium sized enterprises (SMEs) in their efforts to enter foreign markets. We combine internationalization theory (Johanson & Vahlne 1977; 2009) and effectuation theory (Sarasvathy, 2001) to form the conceptual framework in this effort. The Uppsala model (Johanson & Vahlne, 1977) which is the most cited in the internationalization literature explains the *gradual internationalization* that occurs after the SME makes its first foreign market commitment. In contrast, the international new venture (INV) literature (e.g. Oviatt & McDougall, 1994) that has grown in significance over the last two decades, explains the *early internationalization* of small start-up firms. Whilst, these contrasting theories have dominated the internationalization literature over the last few decades the decision-processes pursued by SMEs in the pre- and post-internationalization phase has received scant attention.

More recent literature (e.g. Tan et al, 2007) has suggested the need to examine the pre-internationalization phase to complement the Uppsala model (Johansson & Vahlne, 1977). It remains unclear how SMEs make decisions about their internationalization and how they select countries for foreign operations (Ojala, 2009). In particular, alternative decision processes pursued by SMEs (irrespective of whether they internationalize gradually or early) in their pre-internationalization and key factors impacting such decision processes remain unexplored. The SME internationalization literature has discussed 'resource poverty' (Welsh & White, 1981) that hinders their internationalization efforts and highlight how SMEs use their network relationships to overcome such constraints (Coviello & McAuley, 1999). However, there has been no prior research that examines how foreign market entry (FME) decisions are made in a contingency framework where network relationships are present.

We use this discussion as a foundation to explore how different network relationships facilitate or hinder the different decision making processes during FME. In a departure from traditional models of entrepreneurship which perceives the entrepreneurial decision process as 'causation' driven or planned behavior to identify and exploit opportunities (Shane & Venkataraman, 2000); the 'effectuation' approach (Sarasvathy, 2001) is cited as an 'emerging perspective for entrepreneurship' (Fisher, 2012, p.1042). It is gaining increased attention in

the literature because it describes how entrepreneurs make decisions about creating new ventures and new market opportunities. Entrepreneurs using causation (traditional) processes are goal driven and take a particular effect as given, selecting among means to create that effect. In contrast, entrepreneurs using effectuation processes are means-driven, focusing on the possible effects that can be created with their existing resources (Sarasvathy, 2001).

Our contribution to SME internationalization literature is to examine how the decision making process influences market and technological learning and the choice of FME in high tech SMEs. The main research questions are; how and why are the first and subsequent FMEs shaped by the entrepreneurs' decision making approach? How do entrepreneurs use their relationships to build and sustain market and technological knowledge as they expand internationally?

The paper is structured as follows; the next section provides the relevant theoretical perspectives in the literature, followed by method of research, presentation of case studies and ends with a discussion and conclusion section.

THEORETICAL PERSPECTIVES

Effectuation

Effectuation approach was originally used in the entrepreneurship literature because the characteristics of entrepreneurs are important to trigger the effectuation process. As Sarasvathy (2001, p. 249) states; "Characteristics of decision makers, such as who they are, what they know, and whom they know, form the primary set of means..." Sarasvathy (2001, p.245) "Effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means." The aim is to start with existing resources and then create opportunities for a new venture through partnerships rather than starting with a goal and then looking for the appropriate resources to achieve this goal. Effectuation turns uncertainty into an opportunity mainly because the entrepreneur considers affordable loss instead of expected return in decision making. Threats are perceived by entrepreneurs as opportunities to create something new such as a new product or a new market. Entrepreneurs are flexible and open minded and open to surprises (Sarasvathy, 2001). Consequently, they will be alert to new opportunities (Mainela & Puhakka, 2009) which in our study could be unintentional entry into new foreign markets through an unexpected partnership.

Sarasvathy (2001) considers causation process as using predictive rationality that begins with a goal, followed by competitor analysis and subsequently develops a planned strategy to build a new venture. She does not consider effectuation (means driven) or causation (goal driven) as better decision making approaches but the context will determine which approach is appropriate. Causation is similar to a planned strategy and effectuation is comparable with an emergent strategy (Gabrielsson & Gabrielsson, 2013; Mintzberg, 1978).

Effectuation and Internationalization

There is an evolving stream of empirical studies that integrate internationalization and effectuation to better understand the internationalization process of SMEs (Gabrielsson & Gabrielsson, 2013; Mainela & Puhakka, 2009). In their empirical study using an effectuation approach Gabrielsson and Gabrielsson (2013) found that entrepreneurs did not start their ventures with clear goals but used their intuition to make affordable loss rather than expected return. They also found that as the firms progressed through their growth phase the role of effectuation logic in decision making declined and causation became more prominent.

The original authors of the Uppsala Model (Johanson & Vahlne, 1977 and 2009) and effectuation approach (Sarasvathy, 2001) recognize the benefits of integrating the two models. In their article Schweizer, Vahlne and Johanson (2010) use effectuation to incorporate the entrepreneurial dimension in the internationalization process. In a similar vein, Sarasvathy, Kumar, York and Bhagavatula (2014) demonstrate how effectuation can help understand the entrepreneurial aspect of the internationalization process by adding the individual characteristics of the entrepreneur. Schweizer et al. (2010, p. 369) provide a transition as follows; "...to perceiving internationalization not as an outcome of deliberate efforts to expand internationally, but as a by-product to some other action, here entrepreneurial action." Sarasvathy et al. (2014) highlight that the process perspective in the Uppsala models (1977, 2009) resonates well with the effectuation approach which is also a process perspective. They state that effectuation is also relevant for INVs because the entrepreneur's prior knowledge or experience as well as their access to international networks are important capabilities in the internationalization process. Sarasvathy et al. (2014) posit that since IE research focuses on decisions relating to "Why? When? Where? How? How fast?" (p.76) to internationalize, then the principles of effectuation can help explain what actually happens in practice and provide new conduits for theoretical development. We build on Sarasvathy et al. (2014) by observing entrepreneurs holistically with an identity (who am I?), knowledge (what I know?), and networks (who I know?).

We consider that FME is an act of entrepreneurship because it involves risk and uncertainty. Since FME can be a deliberate strategy or unintentional and unplanned; we use effectuation approach to deepen our understanding about the unintentional aspect. Chandra et al. (2007) found unplanned and unintentional internationalization happened through networking. Indeed, networks and knowledge are central concepts in these new models that integrate internationalization process and effectuation. As Schweizer et al. (2010 p.365) state; "We see the environment of the firm as dynamic, nonlinear, and laced with networks (Johanson & Vahlne 2009; Sarasvathy, 2001)." And about knowledge Schweizer et al. (2010, p.367) state; "Knowledge is of utmost importance, primarily knowledge of opportunities, as this is what drives the process of entrepreneurial activity (Johanson & Vahlne, 2009)." Building on this prior work on internationalization and effectuation we focus on the central constructs of networks and knowledge with emphasis on market and technological knowledge because we study high-tech firms. As firms share what they have learnt with their partners they create new knowledge which enhances their market and technological learning.

We aim to link the critical elements of the causation-effectuation approach to entrepreneurial behaviour to understand how entrepreneurial actions lead to FME. This is important because many of the definitions of internationalization tend to understate the role of individuals in strategic decision making (Andersson, 2000). Thus we address the controversy in the literature particularly at the organisational level (e.g. Johanson & Mattsson, 1988). These scholars suggest that it is difficult for managers to plan and implement strategy because they are part of a large network (Andersson, 2000), while others suggest that managers can choose and manage their personal networks (Oviatt & McDougall, 1994).

The Internationalization Process

Challenges of Internationalization - Should we Internationalize? Internationalization is risky and costly for new firms with limited. Early internationalizing firms, particularly small new firms, are vulnerable because they usually possess few financial, managerial, and tangible resources. These firms lack the resources, economies of scale, slack, legitimacy and routines required for making day-to-day operations controllable and predictable (Wiklund, Baker, & Shepherd, 2010; Freeman, Edwards & Schroder, 2006). Risks, costs and uncertainties

confront the nascent firm externally as a dearth of legitimacy with stakeholders and in target markets – the liability of newness (Stinchcombe, 1965; Freeman, Carroll & Hannan, 1983).

The liability of newness is compounded by the uncertainties of operating away from home markets – the liability of foreignness (Hymer, 1976). However, these liabilities of newness and foreignness may be less constraining in new firms when founders possess prior international experience, vision and capabilities (Autio, Sapienza & Almeida, 2000). These advantages can be substantially attributed to the network relationships the founder had developed in prior employments which help firms to access local market knowledge and obtain business information (Chetty & Patterson, 2002; Coviello & Munro, 1997) and establish contacts (Turnbull, Ford, & Cunningham, 1996). Establishing credibility and trust with its foreign partners are developed in an incremental way through working together (Bucklin & Sengupta, 1993; Larson, 1992). Furthermore, such relationships can provide opportunity for firms to build credibility and trust with other members of the network (Chetty & Patterson, 2002; Turnbull et al., 1996).

How resource-constrained SMEs overcome the barriers of ‘resource poverty’ (Welsh & White, 1981) and reach international markets effectively has received increasing attention in the extant literature. A growing number of researchers suggest that small firms have found unique ways of overcoming their “smallness” (Gomes-Casseres, 1997). In particular, entrepreneurial small firms may overcome size-related constraints through network relationships (Dubini & Aldrich, 1991; Coviello & McAuley, 1999). The international new venture (INV) literature has examined a vast array of antecedent factors of which networking emerges as a key facilitator both as a source of market and technological knowledge needed to develop innovative products and to gain access to relevant markets (Oviatt & McDougall, 2005; Oviatt & McDougall, 1995; Sullivan Mort & Weerawardena, 2006). More recent contributions have shifted focus on knowledge acquisition capabilities. In a departure from past knowledge-based approaches to internationalization (Johansson and Vahlne, 1977), Weerawardena, Sullivan-Mort, Liesch and Knight (2007) argue that for the early internationalization to occur both market and technological learning must be present in the nascent firm. Rapid and successful growth of firms appears to be a result of their involvement in international networks, through which the firm acquires knowledge, often guides foreign market selection and providing the mechanism for market entry (Coviello & Munro, 1997).

Pre-internationalization phase-firsts step towards FME. The pre-internationalization phase in particular, *how* and *when* internationalization occurs has received limited attention in the literature. This can be substantially attributed to the dominance of the stages model of internationalization (e.g., Johanson & Wiedersheim-Paul, 1975; Cavusgil, 1984) which describe internationalization as a planned, sequential and incremental process. This process is driven by the firm’s accumulation of experiential knowledge as they progress with their internationalization efforts. The stage models are criticized for using single construct- market knowledge to explain internationalization (Tan et al., 2007). A well-recognized shortcoming of this work, however, in the early versions and the updated ones, is that it does not explicitly address how the process of internationalization begins (Lamb & Liesch, 2002; Johanson & Vahlne, 2009). Although the work by Wiedersheim-Paul, Olson and Welch (1978) reflects an attempt to model pre-internationalization this has received scant empirical scrutiny.

Recently, Tan et al. (2007) have proposed a pre-internationalization phase to provide a point of origin for firm internationalization. As they indicate this discussion has focused on several constructs facilitating internationalization such as exposure to stimuli (Wiedersheim-Paul et al., 1975; 1978; Caughey & Chetty, 1994; Tan et al., 2007) external (unsolicited orders, encouragement from foreign participants) and internal (organizational and managerial

aspirations to internationalization); attitudinal and psychological engagement (Miesenbock, 1988; Lamb & Liesch, 2002).

Networks and internationalization. How SMEs learn and acquire knowledge during the internationalization process is a critical aspect of Johanson and Vahlne's (1977) model which is expected to influence its FME. As the firm gains more experiential knowledge about a market it reduces uncertainty and thus the firm will commit more resources to that market. Several scholars have found that business networks are crucial for internationalizing SMEs to gain resources such as knowledge (Majkgard & Sharma, 1998; Holm, Eriksson and Johanson 1999). We use Johanson & Mattsson's, (1988) definition of business networks as the relationships a firm has with its customers, distributors, suppliers, competitors, supporting institutions and government—the actors in a business network. As the firm progresses in its internationalization efforts the number and strength of the relationships between different parts of the business network increase.

In their revised model Johanson and Vahlne (2009) consider internationalization as an outcome of the firm's attempt to improve its position within a network. They introduce the concept of liability of outsidership and emphasize the importance of gaining an insidership position in the relevant network for international expansion. They perceive that internationalization is the outcome of a firm trying to improve its network positioning and because networks are borderless internationalization occurs. They posit that the challenges of psychic distance are less important than being outside the relevant network.

The INV literature (e.g. Oviatt & McDougall, 1994; Madsen & Servais, 1997) recognizes that some firms start internationalizing rapidly within a few years of inception. Networks and knowledge that allow the firm to gain access to foreign markets are important factors that enable the firm to achieve this rapid internationalization. The more network relationships a firm has the more they learn about what these relationships offer and how they can combine each other's resources to create something new (Agndal & Chetty, 2007) such as adapting or creating new products (Zhara, Ireland & Hitt, 2000). The more knowledge they accumulate about each other the more committed they become to that relationship (Johanson & Vahlne, 2009). Success in international markets occurs through continuous development of new market and technological knowledge (Bartlett & Ghoshal, 1987).

Networks can be vital to the discovery of opportunities, generating information, testing ideas and the garnering of resources for the formation of the organizational structures (Madsen & Servais, 1997; Liesch et al., 2011) needed for internationalization. Networks facilitate knowledge acquisition relevant to internationalization (Yu, Gilbert & Oviatt, 2011) and can reduce some uncertainties of operating in foreign markets (Freeman et al., 2006). Networks provide access to potential customers and members of the international value chain (Weerawardena, Sullivan Mort, Liesch & Knight, 2007). Bell (1995) found that interfirm relationships (with clients, suppliers, etc.) appear influential in market selection and mode of entry for small firms.

Foreign market entry modes and market and technological knowledge. The evolutionary pattern of firm expansion suggested by the internationalization process theory (Johanson & Vahlne, 1977; Johanson & Wiedersheim-Paul, 1975) begins with low-control transactions and low equity investment commitments of exporting, licensing, franchising, alliances and start-ups (Andersen, 1993). Yet, many SMEs skip some or all of these stages, beginning with high-control investments such as joint ventures and strategic alliances, which they refer to as strategic partnerships given the level of knowledge exchange around technological processes (Freeman et al., 2006). Some SMEs engage in little to no equity investment, with key

network partners, regarded as strategic partnerships (Freeman et al., 2006; Freeman & Cavusgil, 2007). Other SMEs are able to access funding through their networks in foreign markets. This allows them to undertake higher levels of equity investment commitments through merger and acquisition, especially important to control transactions and exchange in technological learning. High-control transactions allow deeper stakeholder involvement which provides the firm with unique experiences and thus growth in their market and technological knowledge bases (Kim, 1997).

In particular, high-control international entry modes have the advantage of providing the SME increased opportunities for market and technological learning. These types of entry modes are best facilitated by closeness to markets and customers, as this allows the SME to experience different and diverse information sources through their networks. Interactions through networking with local suppliers, customers, competitors and government (Dodgson, 1991), allows the SME to learn about substitute products which helps them to improve their own product offerings. Exposure to these multiple forms and presentations of technological information across diverse international markets supports the SME's technological learning (Leonard-Barton, 1995). Thus high-control modes of international market entry through high-equity (merger and acquisition) and non-equity (strategic partnerships) (Freeman et al., 2006; Freeman & Cavusgil, 2007), rather than low-equity modes (exporting, licensing, franchising) expands the networks for market and technological learning.

Expanding into new markets or new products into existing international markets facilitates market learning but also both organizational and especially technological learning which allows SMEs to create and exploit knowledge (Barkema & Vermeulen, 1998; Zahra, Ireland & Hitt, 2000). The development of new technological knowledge is important for SME success in international markets (Bartlett & Ghoshal, 1987) because it influences their ability to adapt products and processes to meet local market conditions (Afuah, 1998). Key aspects of FME include international diversity (e.g. geographic scope and technological and cultural diversity of the firm's markets) and the entry mode into international markets. More specifically, the diversity of the SMEs international environment enhances its stock of market knowledge through learning derived from interactions with the local (host) market and exposure to different innovation systems, which builds technological knowledge. As the SMEs geographic dispersion and cultural diversity increase (psychic distance), the breadth of its technological learning increases (Lei et al., 1996). Learning about more diverse cultural values enhances the SMEs knowledge of the (design and marketing) of products and process technologies and more importantly, expands their *ability to learn* (Teece et al., 1994).

RESEARCH METHOD

We use in-depth qualitative research which is consistent with Eisenhardt (1989; Yin, 1989). This method provides detailed insight into the phenomenon of interest i.e. decision making about foreign market entry. We used one New Zealand SME from the high-tech industry. The main form of data gathering was a semi-structured in-depth interview which lasted two hours. Our interview protocol was guided by the critical incidents method (Miles & Huberman, 1994) aimed at capturing how SME owner/managers make decisions about FME. This approach also enabled us to capture how the complexities in such market environments influence the decision making process. The interview was tape recorded and transcribed. Other sources of data collection were through secondary sources such as websites, archival data from the firms, articles about the firms in magazines, newspapers and industry-and-business- journals.

The transcript was combined with the secondary data to write a detailed case study of the firm. The secondary sources included websites, archival data from the firms, articles about the firms in magazines, newspapers and academic and other industry-and-business-based journals. The transcript and case study was later coded and analyzed systematically by the team to cross check accuracy of coding and to avoid bias in interpretation of data. As suggested by Eisenhardt (1989) in this iterative process, we moved back and forth between emergent findings and extant literature. Theory building from case studies is especially useful for studying a new area of change processes (Eisenhardt, 1989). Thus, we address the dearth of case studies in the international business literature to provide a deeper understanding of the internationalization process (Johanson & Vahlne, 2009) particularly FME decision making.

THE CASE STUDY

Case Study N1

N1 is a family-owned company which was already in existence when the owner (N1F) bought it in January 1999. The factory and the main office are located in New Zealand. N1 manufactures and supplies different types of textiles- natural and industrial. Its products are categorized into two main groups: bedding to consumers and industrial cleaning screens to commercial users. It has international sales in seven countries with 70% of the industrial cleaning screens and 50% of the bedding products sold in foreign markets. N1s average sales are NZ\$ 14 million annually. It first started exporting in 2001 to Korea through a Korean distributor based in the US but well connected in Korea. N1F met this distributor through his extensive network relationships built in Korea through his previous work.

N1Fs prior work experience with other firms in a similar industry, and his knowledge in chemical engineering enabled him to recognize the opportunity in industrial textiles. N1 specifically developed the industrial cleaning screen for the US market. The nature of this product involves a high technology manufacturing process. These industrial cleaning screens are designed to capture and remove emissions in commercial kitchens. These cleaning screens are marketed by N1US located in the USA. N1US is a separate company formed in 2011 and is privately held with under 10 employees. N1F owns one third, some investors in New Zealand own one third and a group of investors in the US own the remaining one third.

The N1US team has been involved in fiber technology for over 40 years with experience in manufacturing a diverse range of nonwoven needled and thermo-bonded products for different types of industries. N1 has developed its technological knowledge through this US team. While N1 had skills in natural fibers by partnering with the US team N1 was able to develop its technological knowledge about industrial textiles through 'learning by doing' with this partner. A technical consultant in the US with over 30 years' experience in the industry played an important role in helping N1 to position itself inside the US network for foreign market entry. N1 had to develop a product for the US market that would satisfy the regulatory requirements there. N1US provides in-country logistics, distribution, warehousing, administration, sales, installation and customer support for the cleaning screen system.

N1 operates its business in two diverse institutional environments namely; US and China. Its main foreign markets are China for bedding and the US for industrial cleaning screens. N1 entered China in 2004 and the US in 2007. N1 entered the US market through an unsolicited approach from a US firm. N1s last three major FMEs were China, US and UK. N1 entered the Chinese market through its relationships with its suppliers based in China who introduced them to potential buyers in China. In addition, N1F had formed several relationships in China through his previous work. While N1 generally had good relationships with its suppliers in China it had one bad experience with a supplier where the quality of its product suffered and

the contract with this supplier had to be cancelled. Furthermore, since entering the US market the dynamics of N1's relationships in China are transforming because the US partners are concerned about intellectual property in China.

DATA ANALYSIS

In this paper we are examining; why, when and where for FME? To answer these questions we build on internationalization process theory and effectuation approach by focusing on networking and FME.

N1 demonstrates a new form of SME which is borderless because it formed a new company in the US to position itself in that market to gain legitimacy. This illustrates that the national border and environment of business is becoming less important which resonates with Sarasvathy et al. (2014) and with Johanson and Vahlne (2009) that internationalization is an outcome of positioning in networks. Relationships extend beyond borders and have therefore taken N1 into unexpected markets because it was flexible and open to surprise and benefited from these opportunities that emerged. The central role of relationships in N1's FME and expansion is consistent with Schweizer et al. (2010) and Sarasvathy et al. (2014). N1 collaborated with its partners in the US to shape the industry environment there when it met with resistance for its innovative cleaning screens which led to changes in the industry. While N1 initially entered the US market by responding to an unsolicited order from a US customer N1 subsequently used this customer and new relationships to position itself in the US. N1 is now expanding into other markets wherever their relationships take them, for example, entering markets in Europe through a major distributor. Thus the partners who came on board which is consistent with Sarasvathy (2001) determine the future FMEs of N1.

N1's experience in the US shows the dynamic influence of networks and market and technological knowledge on FME. N1's commitment to the relationship and market and further FMEs is an outcome of this commitment. The US market provided improved access to resources to learn about market and technology thus exposing them to further FME opportunities. Consistent with Agndal and Chetty (2007) N1 was strongly committed to their US partners and was able to advance their idiosyncratic knowledge stocks further to develop their market and technological knowledge to exploit new FME opportunities. These various aspects clarify that N1 uses the effectuation approach as it is means driven and co-creates its goals with its stakeholders to shape its future direction.

DISCUSSION AND CONCLUSIONS

This paper explores the decision processes of SMEs in their pre-internationalization phase leading to first FME and the last three FMEs. We use the effectuation approach (Sarasvathy, 2001; Fisher, 2012) that has gained prominence to examine entrepreneurial decision processes. We combine this with the internationalization process model (Johanson & Vahlne, 2009) to examine decision making for FME. Figure 1 presents a conceptual model developed by combining our theoretical framework and empirical findings. Consistent with Sarasvathy et al. (2014) the individual characteristics of entrepreneurs in our study are important in shaping the firm's FMEs through their previous work experience, education, access to networks and decision making processes. Our case study illustrates how the question 'who I know' helps the firm to gain an insidership position in networks which then leads to FME. This resonates with Johanson and Vahlne (2009) that internationalization is an outcome of network positioning.

While Johanson and Vahlne (2009) and Sarasvathy et al. (2014) emphasize the positive aspects of relationships the experience of N1 shows some negative experiences that influence

subsequent decision making about foreign markets. The damaging incident with poor quality products from the Chinese supplier cost N1 a huge amount of money and time to handle the consequences. This creates major challenges for resource poor SMEs as their survival is threatened and they may have to exit relationships. We also found the consequences of network interconnectedness and positioning (Johanson and Vahlne, 2009) because N1's US relationships are determining how N1 deals with its relationships in China. This raises the question about power dynamics in relationships and how they influence decision making to facilitate or hinder old as well as new relationships of SMEs during their FME.

The institutional environment in foreign markets influences what type of product is made and mode of doing business in that market. For example, N1 developed a new product and established a separate company in the US to gain legitimacy. Relationships and positioning in networks become more important during subsequent FMEs as they provide opportunities for which other countries the firm enters. The relationships in these ensuing FMEs will determine what type of market and technological learning occurs. A point to explore further is whether SMEs have a decision making portfolio by using causation in more familiar markets and effectuation in new and lesser known markets. These examples of relationships and decision making resonate with Sarasvathy's (2001) 'who I know' (entrepreneur level) and with Johanson and Vahlne's 'insidership position' (firm level). This demonstrates that combining these two theories allows us to better understand FME decision making by examining it holistically at the entrepreneur as well as firm level.

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Figure 1: Conceptual Model

Firm and Entrepreneur Characteristics

Age and size of firm
Previous work experience and knowledge of entrepreneur

Market and Technological Knowledge

Geographic scope of markets
Institutional environment
New technology insights and new products



Networks

Suppliers
Customers
Distributors
Technical and Marketing Consultants



Decision Making Process

Effectuation
Causation



Foreign Market Entry

First FME
Most recent 3 major market entries
Mode of FME

Developing Entrepreneurship Self-Efficacy Through Education

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Developing Entrepreneurial Self-Efficacy Through Education

Abstract

The paper aims to determine whether entrepreneurial self-efficacy is developed in students participating in the Student Enterprise course and how this affects their entrepreneurial self-efficacy and intentions. The assessment measures focused on estimating the student's sense of personal competency in both general skills and their understanding of and capacity to undertake entrepreneurship; asked questions about their envisaged career path; and examined the frequency of behaviours believed to be antecedents of entrepreneurship before and after taking the module. The results show that taking the module has significantly increased entrepreneurial self-efficacy but not intent. Based on the findings, some further research opportunities and ideas for pedagogy are presented.

Introduction

Entrepreneurship education and training have been found to influence both the current behaviour and future intentions of students (Tkachev and Kolvereid, 1999). Ehrlich et al (2000) and Noel (2001) found that entrepreneurship education had a positive impact on entrepreneurial self-efficacy. Peterman (2000) found that participation in an entrepreneurship program significantly increased perceived desirability of starting a business. In addition, those who perceived their entrepreneurship education to be a positive experience showed higher scores of perceived feasibility than those who thought of their educational experience negatively.

Entrepreneurship education has the potential to develop the knowledge and skills to start an enterprise. It can also encourage individuals to consider the option of entrepreneurship as a career path by dispelling negative perceptions associated with it. The individual's increased confidence that he/she has the necessary knowledge and skills to start the enterprise will enhance entrepreneurial intent. Education programs need to contain the pedagogical elements shown to develop particular skills and competencies, linked to enhance self-efficacy which indicate that the forms of teaching may be as important as curriculum content (Lucas and Cooper, 2004).

Krueger et al (2000) believed that at the individual level entrepreneurial intent is the single best predictor of subsequent entrepreneurial behaviour. Entrepreneurial intent is defined as one's intent to start one's own business or become self-employed. Drost's (2010) research on Finnish business students' entrepreneurial intent suggest that educational programs in which students learn about entrepreneurship positively affect students' confidence that they are truly able to start their own businesses within five years. Entrepreneurship-oriented intentions are considered precursors of entrepreneurial action (Bird, 1988; Kolvereid, 1996; Krueger & Bazeal, 1994; Krueger et al, 2000). Studies have shown that entrepreneurial self-efficacy appears to be an important antecedent to new venture intentions (Barbosa, Gerhardt & Kickul, 2007; Boyd & Vozikis, 1994). According to McGee et al (2009), entrepreneurial self-efficacy (ESE) is a "construct that measures a person's belief in their ability to successfully launch an entrepreneurial venture."

Intentions-based models are particularly suited to entrepreneurship as the entrepreneurship process is a planned one (Kuehn, 2008). The literature developed around these models offers

educators an opportunity to construct better learning experiences that can lead to more 'entrepreneurial events' (Shapiro and Sokol, 1982).

Theoretical Framework

Bandura (1997) defines self-efficacy beliefs as "people's judgement of their capabilities to organise and execute courses of action required to produce given attainments" and have the consequence that "people's level of motivation, affective states, and actions are based more on what they believe than on what is objectively true." Individuals need to have an accurate sense of self-image to prevent negative outcomes.

People's beliefs about their efficacy can be developed by various sources of influence. The most effective way of creating a strong sense of efficacy is through mastery experiences. Being successful builds a robust belief in one's personal efficacy. Failures undermine it, especially if failures occur before a sense of efficacy is firmly established. Failures however are useful because it teaches that sustained effort is required for success.

Another way of creating and strengthening self-beliefs of efficacy is through the vicarious experiences provided by social models. Seeing people similar to oneself (or what one wants to be) succeed by sustained effort raises observers' beliefs that they too possess the capabilities to master comparable activities required to succeed. By the same token, observing others' fail despite high effort lowers observers' judgments of their own efficacy and undermines their efforts.

Social persuasion can also strengthen people's self- efficacy beliefs. People who are persuaded verbally that they possess the capabilities to master given activities are likely to mobilize greater effort and sustain it than if they harbour self-doubts and dwell on personal deficiencies when problems arise. To the extent that persuasive boosts in perceived self-efficacy lead people to try hard enough to succeed, they promote development of skills and a sense of personal efficacy.

Research Objective

This research aims to determine whether entrepreneurial self-efficacy is developed in students participating in the Student Enterprise course and whether taking it affects their career intentions.

Programme Curriculum and Delivery

Kolb's (1984) learning cycle was used as a framework in developing the Student Enterprise course. Kolb has the 'cycle of learning' as a central principle his experiential learning theory, expressed as four-stage cycle of learning, in which 'immediate or concrete experiences' provide a basis for 'observations and reflections'. These 'observations and reflections' are then assimilated and distilled into 'abstract concepts' producing new implications for action which can be 'actively tested' in turn creating new experiences.

Student Enterprise is an optional course taken across two semesters. It is offered to all first year students in the university regardless of their degree. The numbers of students enrolled in the course have grown from 40 students to more than 120 students in 3 years. It is an interactive and practical course aiming to inspire students to entrepreneurship by giving them a comprehensive introduction. Students are divided into groups of 6 and in those teams needed to develop a business plan and implement the business plan for 3 months through the establishment of a microenterprise. The establishment of the microenterprise offered students

to “develop subject mastery by undertaking authentic tasks and engaging in real activities” (Cooper, et al, 2007). Experiential and reflective methods are known to promote deep learning (Loo and Thorpe, 2002).

The curriculum was delivered using a range of pedagogical techniques to allow the students to experience a diverse learning environment in line with Kolb’s experiential learning theory. As there were 126 students in total, the core curriculum was delivered in weekly one hour lectures. Then the students were divided into 5 one-hour tutorial groups. However, Tracey and Phillips (2007) believe that entrepreneurship education requires a strong experiential component, reflecting the fact that much entrepreneurial knowledge is tacit and not easily transferred within a lecture. In the weekly tutorial groups for the first semester, the groups work progressively on developing their business idea and writing their business plans. In the first two weeks of the semester, the teams engaged in various interactive exercises in creativity and brainstorming to come up with their business idea. They then tested their idea through market research, and conducted secondary research to help estimate demand and costs for their product/service. At the end of the first semester, the teams had to present their business plan to a panel of 3 judges comprising an entrepreneur, a small business consultant and a business executive. They were given 15 minutes to present their business plan and had to answer questions from the panel members. Prior to this presentation, students had to undergo a 2 hour presentation and pitching workshop conducted by an external expert.

The second semester saw the students apply principles of small business management in the implementation of their business plans. The microenterprises set up ranged from selling (t-shirts, hoodies, tracksuits, mobile phone accessories, fancy dress costumes and accessories, hand-made soap), providing services (student room cleaning services, organising trips, parties and sporting events), developing web-based platforms for selling and exchange and mobile phone applications (events and specials catering to students, food and wine). The teams had to run the microenterprise for 3 months in conjunction with attending the lectures and tutorials. Tutorials in the second semester offered teams the opportunity to have regular planning sessions, progress reviews with the lecturer. All teams also had a 30 minute enterprise surgery session with a small business consultant who gave them advice on a specific management issue the team has discussed with them. Smith, et. al (2008) believe that the use of experiential exercises is key component of an entrepreneurial curriculum because of its ability to “reflect a real-world environment. Additionally, these activities have provided opportunities for students to engage in learning in a significantly different from the typical “teacher centred classroom”. As Heinonen and Poikkijoki (2006) emphasize, concrete experience gained from active participation is a must in the art and science of teaching entrepreneurship.

At the end of the course, the teams had to write an enterprise performance report which reviewed the microenterprise results and compared them to the business plan. Teams had to present their results and justify deviations from their business plans. Students were also required to write a reflection on their experience of setting up and running a microenterprise, what they have learned and what could be done differently to improve the experience. Critical thinking and reflection have been linked to the achievement of deep learning (Loo and Thorpe, 2002)

The students also had guest speakers in the second semester. The guest speakers were young entrepreneurs who were successful in starting up their businesses. These presentation from the guest speakers allowed the students to learn from their experiences in starting and running their own social enterprises. These speakers provide opportunities for students to learn form those

with the direct experience of enterprise (Chen et al, 1998) and represent vicarious learning opportunities in the context of Bandura's (1997) characterisation of sources of self-efficacy. Speakers shared their experiences of problems and challenges they have encountered, their successes and failures as well as their perseverance in overcoming adversity.

The above mentioned high involvement activities “provide the chance for heightened bodily/emotional states among learners. The higher the level of active participation and engagement the learner has, the greater the chance that he or she will develop higher levels of self-efficacy (Cooper et al, 2007)”.

Methodology

The questionnaire used was developed by Lucas and Cooper (2004). The assessment measures focused on estimating the student's sense of personal competency in both general skills and their understanding of and capacity to undertake entrepreneurship; asked questions about their envisaged career path; and examined the frequency of behaviours believed to be antecedents of entrepreneurship before and after taking the course.

The assessment measures are focused on estimating the student's sense of personal competency in both general skills and in their understanding and capacity to undertake entrepreneurship, asked questions about their future career, and looked for behaviours shown to be antecedents of entrepreneurship.

The Student Enterprise course was evaluated with a pre- and post-test design. The pre-test questionnaire was distributed to the 122 students (out of 126 who were registered) who attended the first session before any introduction to the course was made. The post-test questionnaire was distributed to the 116 students who attended the last session just before the course ended. Only a total of 98 pre and post questionnaires were used as some students only did the pre or post, hence their responses could not be compared. The pre-and post-test design was required to measure the change in self-perceptions and attitudes. The post-test will help determine whether there is proximal impact of the event that can only be attributed to the program, suggesting a link with the program content and changes in entrepreneurial self-efficacy.

Results

The respondents' ages ranged from 17-28, with 85.7 percent of them being 17-19 range. All of the respondents were studying full time and were completing their first year of study. The respondents were split 50-48 between males and females. More than 64 percent of the students were taking a social science degree which included economics and business). Around three quarter (73.5%) of the students were from the UK and the rest were evenly split between EU and other countries. In terms of ethnicity, around 60 percent are either English, Scottish or Welsh, about 8 percent were of Asian origin, 3 percent were African and the rest from other nationalities (mainly European). Please refer to the table below for some of these figures.

Table 1. Demographic Data of the Sample

Characteristic	Frequency	Percentage
Gender		
Male	50	51
Female	48	49
Current Degree		
Arts, Language & Humanities	14	14.3
Social Science (incl Eco & Bus)	63	64.3
Maths and Sciences	5	5.1
Engineering and Technology	12	12.2
Other	4	4.1
Nationality		
UK	72	73.5
EU	13	13.3
Other	13	13.3
Ethnic Background		
Asian Indian/Oriental/Pakistan	8	8.2
African	3	3.1
English/Scottish/Welsh	59	60.2
Other	28	28.5

Referring to the table below, quite a few students (47.9%) had a father that ran his own business. Of these, 40.4 percent of their fathers talked about business often and 38.3 percent occasionally. Only 22.5 percent of the students had mothers who owned businesses although 40.9 percent talked about the business either often or occasionally. The results support Shane's (2003) observations that individuals exposed to entrepreneurship and entrepreneurs are more likely to start businesses themselves. Specifically, he found that when parents were self-employed it was more likely that their children would be as well.

Table 2. Exposure to Family Business

Question	Frequency	Percentage
Father owned business	47	47.9
Mother owned business	22	22.5
Father talked about business		
Almost never	10	21.3
Occasionally	18	38.3
Often	19	40.4
Mother talked about business		
Almost never	9	40.9
Occasionally	4	18.2
Often	9	40.9

The table below presents results on respondents' exposure to enterprise courses. Only 9 students have taken an entrepreneurship course before taking Student Enterprise. For these students their previous courses ran between 10-52 weeks with the course meeting between 1 to 3 times per week.

Table 3. Exposure to Enterprise Course

Question	Frequency	Percentage
Taken previous enterprise course		
No	89	90.8
Yes, One course	8	8.2
Yes, more than one course	1	1

When asked to rank their current skills and abilities (on a scale of 1-6) and compare themselves to other students in their year, 22 items (out of 23 items) emerged to have changed significantly after attending the student enterprise course. Table 4 reports the results of this question. Of the 22 items, 5 are related to self-efficacy. These are: start a successful business if you want to, start a social enterprise if you want to, understand what it takes to start your own business, understand the language of new venture creation and understand what it takes to start your own social enterprise. The analysis shows that the means for the 22 items have significantly increased at the post-test and the total frequencies for the responses of good, very good and excellent have increased by an average of 16.3 percent. This indicates that the respondents felt that their current skills and abilities were improved by participating in the course.

Table 4. Self-Rating of Current Skills and Abilities

Item	Pre			Post			t (sig*)
	Mean	N**	%	Mean	N**	%	
Apply an abstract concept to real problem	3.8557	60	61.25	4.1340	83	84.69	-2.227 (0.028*)
Persuade company managers to take idea seriously	3.6429	62	63.27	4.0408	77	78.57	-3.520 (0.001*)
Start a successful business if you want to	3.7041	55	56.12	4.0408	68	69.39	-2.421 (0.017*)
Start a successful social enterprise if you want to	3.5510	53	54.08	4.1122	70	71.43	-3.531 (0.001*)
Work on a collaborative project as a member of team	4.3673	81	82.65	4.7245	91	92.86	-3.545 (0.001*)
Recognize a good opportunity when you see it	4.1939	73	74.49	4.5714	85	86.73	-2.995 (0.003*)
Lead a group that strongly disagree with each other	3.3980	47	47.96	3.9082	71	72.45	-3.951 (0.000*)
Understand what it takes to start your own business	3.4082	49	50.00	4.3469	82	83.67	-7.290 (0.000*)
Create novel solutions to problems	3.4592	55	56.12	4.1429	81	82.65	-6.438 (0.000*)
Understand the language of new venture creation	3.1224	34	34.69	3.8571	66	67.35	-5.866 (0.000*)
Understand what it takes to start your own social enterprise	3.1020	35	35.71	4.0714	73	74.49	-8.324 (0.000*)
Achieve objectives for a project you have agreed to do	3.9796	72	73.47	4.3061	88	89.80	-3.292 (0.001*)
Negotiate successfully with others who don't share your views	3.8878	66	67.35	4.1939	74	75.51	-2.761 (0.007*)

Identify the pros and cons when making difficult decisions	4.3265	82	83.67	4.4898	87	88.78	-1.339 (0.184)
Develop ways to resolve conflict when making difficult decisions	3.9286	67	68.37	4.3061	76	77.55	-2.296 (0.024*)
Manage a project to meet fixed deadlines	4.2143	79	80.61	4.4286	78	79.59	-1.639 (0.104)
Network with people outside of your group for help and advice	3.8469	64	65.31	4.2143	75	76.53	-3.019 (0.003*)
Plan in detail the steps/resources necessary to accomplish the task	3.7143	61	62.25	4.1531	74	75.51	-3.614 (0.000*)
Delegate authority to make important decisions	3.7653	58	59.18	4.3673	80	81.63	-4.242 (0.000*)
Listen to the ideas of others with an open mind	4.4181	86	87.76	4.7143	89	90.82	-2.771 (0.007*)
Modify plans for a project to take account of the input of others	4.0714	69	70.41	4.4184	82	83.67	-2.391 (0.019*)
Control feelings of anxiety when dealing with other people	3.8571	63	64.29	4.2245	75	76.53	-2.977 (0.004*)

* - significance at > 0.05

** - total frequencies for the responses good, very good and excellent

Respondents were also asked about their confidence to perform new venture creation tasks. They were given a number between 0%-100% to indicate their confidence level in performing each skill. Looking at table 5 below, the results show that levels of confidence in all 17 items were significantly improved at the post-test as indicated by their means. There was about an average 29.90% increase in the respondents that had confidence ratings of 60% and above. The above findings show that the respondents were more confident with their skills in creating a new venture after taking the course.

Table 5. Self-Rating of Specific Skills

Item	Pre			Post			t (sig*)
	Mean	N**	%	Mean	N**	%	
Pick the right marketing approach	5.2857	50	51.10	6.5306	80	81.63	-5.993 (0.000*)
Recognise and recruit good employees for a new venture	5.8980	60	61.22	6.6020	76	77.55	-3.626 (0.000*)
Sell a brand new product to a first time customer	5.5000	52	53.06	6.6735	83	84.69	-5.244 (0.000*)
Persuade others to stay with a new company that has problems	5.2653	45	45.92	6.5816	79	80.61	-7.117 (0.000*)
Estimate accurately the costs of running a new venture	5.1122	39	39.80	6.2857	66	67.35	-5.569 (0.000*)

Raise money to support a project addressing a social need	5.3980	47	47.96	6.4796	68	69.39	-4.920 (0.000*)
Recognise when an idea is good enough to support a new venture	5.7857	58	59.18	6.9490	87	88.78	-6.427 (0.000*)
Have the skill to design a service to meet a new market opportunity	5.4286	50	51.02	6.7245	82	83.67	-6.495 (0.000*)
Persuade an investor to put funds into a new venture	5.4184	52	53.06	6.4082	70	71.43	-4.437 (0.000*)
Write a clear and complete business plan	4.8265	38	38.78	6.9286	76	77.55	-8.332 (0.000*)
Estimate accurately the number of people who are likely to buy the product	4.5204	29	29.59	6.000	63	64.29	-7.415 (0.000*)
Know how to place the proper financial value on a start-up	4.1939	23	23.47	5.9286	63	64.29	-8.827 (0.000*)
Get suppliers to support a venture with favourable prices and contract terms	4.7857	32	32.65	6.1939	64	65.31	-6.269 (0.000*)
Inspire confidence in a radically new business plan	5.4184	48	48.98	6.6429	76	77.55	-6.642 (0.000*)
Analyse the strengths and weaknesses of a business plan	5.7449	58	59.18	6.7755	77	78.57	-4.554 (0.000*)
Present a persuasive case for funding a new venture at a business meeting	5.2041	47	47.80	6.6531	79	80.61	-6.688 (0.000*)
Deliver a short statement on a new venture to win over an intended audience	5.1633	42	42.86	6.6020	79	80.61	-7.013 (0.000*)

* - significance at > 0.05

** - total frequencies for the responses of 6 and above.

Looking at table 6, findings from the study indicate that the course had substantial impact. The results of the post-test indicate that there is a strong link between the programme and the changes in entrepreneurial self-efficacy. After taking the course, the number of respondents who were confident in understanding what it takes to start their own business nearly tripled (from 15.31% to 43.88%). There was also an increase in the confidence of respondents in starting a successful business if they wanted from 14.29 to 27.55 percent. The Entrepreneur Career scale which was the average of the two above mentioned question also increased significantly from a mean of 3.5069 to a mean of 4.1424. The Cronbach's coefficient of reliability for the Self-Efficacy scale for the pre-test is 0.667 and for the post-test is 0.468.

Table 6. Self-Efficacy Items

Item	Pre			Post			t (sig*)
	Mean	N**	%	Mean	N**	%	
Understand what it takes to start your own business	3.4082	15	15.31	4.3469	43	43.88	-7.290 (0.000*)
Start a successful business if you want	3.7041	14	14.29	4.0408	27	27.55	-2.421 (0.017*)
Start a successful social enterprise if you want to	3.5510	8	8.16	4.1122	24	24.49	-3.531 (0.001*)
Mean scores, Entrepreneur Career scale (Understand + Start average)	3.5069			4.1424			-6.468 (0.000*)

* - significance at > 0.05

** - total frequencies for the responses of Very Good and Excellent

The Student Enterprise course provided students with opportunities for personal development and learning with respect to general and specific knowledge and skills which impacted on levels of confidence and self-efficacy. This course sought to increase the intentions of participants to be more entrepreneurial. To assess the extent to which the intentions of the respondents were changed when they participated in the Student Enterprise course, a measure of an individual's level of intent to pursue entrepreneurship was adapted from Lucas and Cooper (2004). Participants were given statements and they indicated their agreement on a 7-point scale from "strongly disagree" to "strongly agree". The results of the entrepreneurial items are summarised in the table 7 below. The Cronbach coefficient of reliability for pre-test is 0.649 while post-test is 0.770.

Table 7. Entrepreneurial Intent Items

Item	Pre			Post			t (sig*)
	Mean	N**	%	Mean	N**	%	
If I see an opportunity to start a company in the next few years I'll take it.	5.1122	42	42.86	5.1531	40	40.82	-0.309 (0.758)
The idea of a high risk/high-payoff venture appeals to me	4.7245	35	35.71	5.0306	35	35.71	-2.075 (0.041*)
I often think about ideas and ways to start a business	4.8469	40	40.82	5.1122	43	43.88	-1.595 (0.114)
At least once I will have to take a chance to start my own company	5.1429	44	44.90	5.0714	46	46.94	0.469 (0.640)
Mean score, Intention scale of four items	4.8967			4.9918			-0.895 (0.373)

* - significance at > 0.05

** - total frequencies for the responses of Agree and Strongly Agree.

The results show that the levels of intentions changed very little over the course of the course. Although there were some slight increases and decreases in the items, only one item was found significant (The idea of a high risk/high payoff venture appeals to me). The creation of an entrepreneurial intentions scale, by summing and averaging the four items, generated results shown in the last row of table 7, which shows an insignificant change. The findings suggest that the programme had little effect on the immediate entrepreneurial career intentions of the

respondents. Teamed with to the results in table 8, it seems that after taking the course 79.59 percent of the respondents are quite/very likely to work for an established business while only 45.92 percent are quite/very likely to set up their own business. It may seem that for some respondents that setting up their own company is a long-term goal.

Table 8. Future Career

Item	Pre			Post			t (sig*)
	Mean	N**	%	Mean	N**	%	
Studying for a higher degree	3.5616	50	51.02	3.9592	21	21.43	-2.106 (0.038*)
Teaching	1.9694	7	7.14	2.6224	3	3.06	-3.309 (0.001*)
Academic research	2.2449	9	9.18	2.5306	5	5.10	-1.285 (0.202)
Industrial research	2.4388	16	16.37	2.8265	9	9.18	-1.776 (0.079)
Working for an established business	4.1531	83	84.69	4.5000	78	79.59	-2.220 (0.029*)
Setting up your own company	3.5918	55	56.12	3.8571	45	45.92	-1.694 (0.093)
Working in an established profession	2.9490	35	35.71	3.4286	32	32.65	-2.147 (0.034*)
Working for the civil service in local/national government	2.4082	16	16.33	2.9694	18	18.37	-2.447 (0.015*)
Working for a charity/non-profit	2.4388	17	17.35	3.0408	19	19.39	-3.021 (0.003*)

* - significance at > 0.05

** - total frequencies for the responses of quite likely and very likely.

Discussion

The results of the study support theories that suggest that self-efficacy is a malleable concept. The findings indicate that for a significant number of respondents, their self-efficacy was influenced positively by their participation in the course.

The findings of this research also support Cooper, et al's (2007) suggestion that the importance and potential value of building elements of authentic experience into enterprise education programs if one wishes them to have positive effect on the development of self-efficacy in areas which they are likely to be important in shaping attitudes, intentions and ultimately behaviour. Experiential learning comes from providing students opportunities for concrete experiences and active experimentation. The development of a business plan and the establishment and operation of a microenterprise in the Student Enterprise course allowed students to gain knowledge about entrepreneurship through their transformative experience. These experiences can help improve the perceptions of students on what is really involved in setting up a new business venture. By operating the microenterprise for three months, the students learn key issues and challenges inherent in new ventures. The notion of experiential learning is helpful in entrepreneurship, Deakins and Freel (1998) argue that "the entrepreneur is forced to alter behaviour through experiential learning". Experience can generate new meaning, and bring about consequent changes in thinking and behaviour although not necessarily all the time.

Having individual and group activities allow the students to develop other aspects of self-efficacy and skills necessary in venture creation such as team working, communication, negotiation and managing diversity. One of the important requirements of forming a team was to ensure that there was a mixture of students from different degrees, ethnic groups/nationalities and gender. Rae and Carswell (2000) found that although individual learning processes and experiences are diverse, experiential and social learning are significant. Entrepreneurship education needs to make optimum use of these forms of learning. And although functional business is important without the learning processes it is unlikely to lead to self-efficacy.

Students were also able to learn vicariously from the invited guest speakers. As the speakers were from a variety of industries, from biotechnology to service, from manufacturers to service providers, from small to large, students now have a broader idea of what various business models are available. Guest speakers allow students to learn directly from those who have first-hand experience of setting up a new business.

Students were also given regular feedback, formally through assessments such as formal presentations, the business plan and enterprise performance report, informally through weekly progress sessions during the tutorial. There were instances where some groups met with the course examiner outside of class hours to extend discussions on their microenterprise operations. Increased regularity of assessment and feedback provides tangible evidence of changes in performance which can be influential in enhancing self-efficacy (Orpen, 1999)

Although the study shows that taking the Student Enterprise course did not increase intentions towards entrepreneurship, 45.92 percent indicated that they are quite likely or very likely to set-up their own company. This could mean that these students will consider starting-up in the long-term rather than in the near future. A few have indicated that they would like to work for an established company before starting their own enterprise. Drost's (2010) results suggest that educational programs in which students learn about entrepreneurship positively affect students' confidence that they are truly able to start their own businesses within 5 years. course.

From a personal development perspective, the respondents have developed skills and acquired knowledge that would not only help them as entrepreneurs but also make them valuable employees to any organisation. Being able to work in teams, being able to persuade others of your idea and being able to achieve objectives are important skills employers look for in a potential employee. Acquiring these skills will make the transition from university to the workplace much easier.

Conclusion and Recommendations

This research aims to determine whether entrepreneurial self-efficacy is developed in students taking a 6 month entrepreneurship course as part of their university degree. The results show that taking such a course can develop entrepreneurial self-efficacy through the mastery of the start-up experience, through vicarious learning when listening and interacting with guest entrepreneur speakers, through social persuasion obtained through continuous feedback and positive encouragement from the teaching staff.

Although the results show a significant increase in entrepreneurial self-efficacy, there was no corresponding increase in entrepreneurial intent. This may be possible that after taking the course, the students have developed a more realistic self-perception which may have caused the students to consider an entrepreneurial career on the long-term. Some students may have

realised that entrepreneurship is not suited for them as they have a more realistic view of what is needed to start a business from the microenterprise start-up and the guest speakers.

Based on the results of the research, the following recommendations can be suggested:

- Repeat this research over several years, to confirm whether the increased self-efficacy is consistent across different cohorts of students taking the same course. Another research opportunity would be to track the current sample after a period of time (for example 3, 6 or 12 months) and see whether their entrepreneurial self-efficacy has changed.
- It would be advantageous to design a qualitative research instrument to go along with this quantitative research, in order to validate these results. Qualitative data would give richer information about how the students obtained knowledge and developed entrepreneurial skills and how taking the course has affected their entrepreneurial self-efficacy.
- Examination of the exact features of entrepreneurship courses and their relative influence on self-efficacy would also be an interesting study. The identification of specific teaching tools and techniques that help enhance self-efficacy will be an important step in developing effective entrepreneurship courses.
- The importance of self-efficacy does not suggest that the technical knowledge and informational content of an entrepreneurship course is unimportant. The quality and usefulness of the content in the courses have an impact on the student's perception of their learning and influences their evaluation of their ability to become an entrepreneur. It is therefore also important to identify essential content students need in order to give students the confidence to start their own business.

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The Role of Social and Human Capital in the Emergence of Entrepreneurial Business Leaders: Exploring the Experience of Young Women

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The Role Of Social And Human Capital In The Emergence Of Entrepreneurial Business Leaders: Exploring The Experience Of Young Women

Abstract

Government policy makers in many developed economies are interested in accelerating economic growth by stimulating entrepreneurship, particularly amongst women who represent a relatively untapped source of entrepreneurial potential. This paper focuses on the experiences of entrepreneurial young women who have developed businesses and assumed leadership roles within those ventures, with a particular focus on the influence of their social and human capital in defining their prospects as entrepreneurial leaders. A number of factors are explored which may result in young women pursuing entrepreneurial leadership roles being insufficiently resourced in terms of these two key capitals. Consequences for the effectiveness of their leadership and development of their enterprises are considered.

Introduction

Policymakers in many developed economies are interested in accelerating economic growth by stimulating entrepreneurship, particularly amongst women who represent a relatively untapped source of entrepreneurial potential. Faced with the aftermath of the economic crisis, in particular youth unemployment, many governments are focusing on the potential for young people to create their own ventures. Those establishing ventures, exploiting opportunities and challenging the status-quo, display traits including risk taking, higher levels of personal confidence, lower fear of failure, and competencies, including higher levels of management know-how and know-who, vision, innovation, team-building, communication skill, resource management skills and flexibility. These are developed primarily through education, professional and social experience: the broader and deeper the experience/exposure prior to start-up, the richer the resources on which entrepreneurs may draw. When encouraging youngsters to embark on an entrepreneurial journey it is important to understand whether individuals have the requisite leadership skills and abilities to establish ventures with growth potential as, often, young entrepreneurs have served only a brief entrepreneurial 'apprenticeship' and those starting straight from school/university have even less experience.

Leadership research traditionally reflects the influence of men in leadership roles, exhibiting 'male' characteristics like confidence, aggression and self-direction. In becoming effective leaders women appear to face the double-bind of being communal but also needing to be agentic. There is little empirical evidence regarding the ways in which young people and women, in particular, develop and utilise entrepreneurial leadership skills and competences. Thus, drawing on the findings of a longitudinal, qualitative study of 18 young female business owners, the aim of this paper is twofold: to explore the influence of social and human capital in defining the prospects of young women business owners as emerging entrepreneurial leaders and to provide insights to the impact of such capitals on their entrepreneurial journey. We propose that factors, including personal circumstances, fragmented employment histories and the cultural contexts in which their businesses operate, mean that many young women seeking to assume entrepreneurial leadership roles in society may be insufficiently resourced in terms of their social and human capital and that such deficits have consequences for their abilities to lead the development of their enterprises. The paper is structured as follow: in the next section we present a review of literature on leadership and social and human capital before introducing details of the methodology used in the research and reporting on issues emerging from the study. In the final section we discuss the key research findings and consider implications for theory, policy and practice.

Review of literature

Entrepreneurship, leadership and gender

Entrepreneurial business practitioners, whether small business owners or chief-executives of larger companies, are recognised as leaders in their enterprises and as potential role models for others (Fernald et al. 2005; Swiercz & Lydon 2003; Timmons & Spinelli 2009). Leitch et al. (2013, 348) define “entrepreneurial leadership as the leadership role performed in entrepreneurial ventures, rather than in the more general sense of an ‘entrepreneurial’ style of leadership”. They describe an entrepreneurial venture as a business based on a persistent, systematic identification and exploitation of opportunities arising from the entrepreneurial leader’s vision, innovativeness and pursuit of resources. Gupta et al. (2004: 246-247) identify two principal challenges which entrepreneurial leaders have to address: first, “scenario enactment”, “envisaging and creating a scenario of possible future opportunities that can be seized”, and, secondly, “cast enactment” which is about being able “convince both potential followers and the firm’s network of stakeholders” that the objectives within the scenario envisioned can be accomplished. Burns (2014, 275), reflecting on how one might become an entrepreneurial leader suggests that “You need to build an organisation that is fundamentally entrepreneurial, one that embodies your character traits or DNA as well as your approach to management”. Like Gill (2011), he suggests that attributes, skills and behaviours that an entrepreneurial leader should have include strategic vision, innovativeness, effective communication and strength as a team player and in building effective relationships. Such individuals demonstrate a higher level of personal confidence and high ethical values (Leitch et al. 2013; Timmons & Spinelli 2009). These views of entrepreneurial leadership call for skills and abilities, which arguably are developed and honed through time, and the ability to develop personal and professional connections to achieve desired outcomes.

Leadership research has traditionally reflected the predominant influence of men in leadership roles. The most popular image of effective leadership in society continues to reflect agentic characteristics such as confidence, aggression, self-direction, characteristics associated with maleness. Research into gender as a factor in understanding leadership styles has tended to emphasise differences between men and women as leaders (Eagly & Johannesen-Schmidt 2001). Eagly (2007) suggests that such differences most likely occur in discretionary aspects of leadership such as being friendly or remote or to mentor or ignore subordinates. Women are seen to display more communal characteristics associated with concern for others, warmth and gentleness, particular traits and behaviours including sensitivity, emotion and verbal communication, that suit them for relations-oriented leadership roles, and which are particularly appropriate for specifically female-dominated organisational settings. Outside these settings women are perceived to be less effective (Eagly 2007; Eagly & Karow 1991; Scott & Brown 2006).

As increasing numbers of women enter the workforce, particularly in senior management positions and across different organisational settings, and as they increasingly engage in business ownership, they effect changes in social and cultural attitudes (OECD 2008), resulting in blurring of once clear differences in the roles played by the sexes, challenging traditional distinctions between men and women as leaders. However, to be recognised as effective leaders women face the double bind of being communal but also needing to be agentic in their leadership style. Emergence of this more androgynous style suggests that leadership research is now increasingly viewed as a gender issue. Where a leader might draw, as appropriate, on the best of male and female characteristics is identified by Eagly & Karow (1991) as a support to the aspirations of women leaders in challenging long-established stereotypes. To manage

this double bind, women, more so than their male counterparts, must be seen to be particularly competent in their field (Eagly 2007).

Deeply ingrained societal views which skew people's expectations of women as leaders and particularly entrepreneurs, reinforcing preconceived biases as to their likely effectiveness, remain stubbornly persistent. Pre-set views continue to place significant restrictions on the acceptability of women in key leadership roles, compromising their effectiveness and feeding resistance to their authority, presenting significant challenges to their establishment as effective leaders (Davis et al. 2010; Eagly 2007; Latu et al. 2013; Scott & Brown, 2006). Central to the challenges they face is the management of relationships with those they lead, reflecting issues around transformative leadership, a style which should give women an advantage, around shared leadership, and the importance of a focus on 'followership', dimensions very much in tune with the development of social and human capital (Avolio et al. 2009; Eagly and Johannesen-Schmidt 2001; Gill 2011).

This research focuses on young women as aspiring entrepreneurial business leaders. As paid employment remains elusive for many young people as a result of the economic downturn, taking the lead in development of a new venture offers young people an opportunity to engage in economic activities that may otherwise be denied to them (OECD 2008). However, it presents those who make that career choice, regardless of age and gender, with significant leadership challenges, including, and in particular, the ability to mobilise capital resources necessary for new venturing (Marlow & Carter 2004). Leitch et al. (2013, 349) note that "The development of leadership, to build company resources and capabilities, rests on the availability of both human (the repository of valuable knowledge and skills) and social capital (the relationships between individuals and organizations that facilitate action and create value)". The absence of such capital is recognised as likely to have a significant moderating influence on entrepreneurial leadership ambitions of women (Avolio et al. 2009; Katila & Eriksson 2013; Leitch et al. 2013).

Given their personal circumstances, work experience histories and the cultural context in which their businesses operate, women may be at a disadvantage in terms of accruing capitals necessary for a career as an entrepreneurial leader (Harding 2006; Walker & Webster 2006); young women business owners, are, we argue, an even more particular case. They are under-represented both within new business venturing and within academic research, a gap this paper seeks to address. Youth entrepreneurship literature, itself limited, has ignored the particular experiences of young women, meaning researchers have little on which to draw to develop theoretical ideas, except research focusing on the experiences of older more experienced female entrepreneurial leaders. These are inappropriate reference points and fail to recognise sufficiently the heterogeneity of women in entrepreneurial practice and leadership research (Walker & Webster 2006; Harding 2006). The challenges which young women face are particularly acute as they encounter barriers exacerbated by a 'double bind' of potential discrimination on the basis of youth and gender (Carter and Shaw 2001; Duncan & Loretto 2004). With limited management experience and under-resourced in terms of human and social capital, they are likely to find it relatively more difficult to consider business leadership than other women (Anderson & Millar 2003; Shaw et al. 2001). We turn now to consider aspects of social and human capital relevant to this research.

Social and human capital dimensions

Human capital is vital for successful business venturing and can be divided into general human capital, comprising socio-demographic characteristics such as age and gender, and specific, intellectual human capital, derived from investment in formal education and training and prior

work and managerial experience (Madsen et al. 2003). Education is a particularly important element of human capital for would-be young entrepreneurs, given they may engage in venturing straight from school, college or university and with little prior work experience (Madsen et al. 2003; McGowan et al. 2012). It can provide the basis for shaping the knowledge, behaviour and orientation of young people, influence the decision to pursue business ownership and foster an understanding and respect for entrepreneurial business leaders, recognising their value to communities and economies (Birdthistle 2008).

Human capital gained from prior work experience is seen as a crucial complement to skills and knowledge acquired through education, improving access to financial and social networks and managerial experience, enhancing the long-term prospects for business development and growth (Heilbrunn 2004; Shaw et al. 2001) and boosting personal credibility (Marlow & Carter 2004). Young people who aspire to business leadership, regardless of gender, are particularly disadvantaged when embarking upon a business venturing career without first accruing sufficient life and/or work experience (Logue 2004). Such limited experience means that opportunities to accumulate further human capital resources, necessary for successful business venturing, may be difficult to identify (Williams 2004). For young women in particular this lack of prior work and managerial experience may compromise their effectiveness as entrepreneurial leaders.

While young women business owners may confront many barriers similar to their young male or older female counterparts, the magnitude of these problems may be greater, owing to the potential ‘double bind’ of discrimination based on their youth and gender (Duncan & Loretto 2004; Still 2003). This is supported by intersectionality theory, which suggests that disadvantage accrues when an individual possesses two or more subordinate-group identities (Purdie-Vaughns & Eibach 2008), and, encounters an ‘intersection’ of multiple forms of discrimination and disadvantage arising from a mixture of socially and culturally constructed categories including age, race, gender and ethnicity (Knudsen 2005). For instance, while literature suggests that women business owners are particularly disadvantaged when accruing relevant capital resources (Carter & Shaw 2006), young women are often especially constrained by people not taking them seriously because of youth and gender (Tam 2000). This double bind is compounded by low levels of pertinent business knowledge, limited life and work experience (Heilbrunn 2004), restricted access to networks, and a more general education and administrative-based work background compared with the, generally, more specialised work experience of men.

Social capital is defined by the connections, relationships and goodwill which exist between an individual and her network of contacts, combined with norms of trust, reciprocity, information and co-operation generated between the focal person and actors in the social group (Audretsch & Keilbach 2004; Timberlake 2005). Research suggests that investments in social capital are vital to effective business leadership, providing access to valuable resources, both human and financial (Audretsch & Keilbach 2004; Pirolo & Presutti 2010; Timberlake 2005). Building value into social capital reflects a number of factors; the centrality of the focal actor in her community of relationships, the density and diversity of those relationships and the potential for reachability beyond them, including strength of weak ties (Hampton et al. 2009; Leitch et al. 2013).

An individual’s social capital can be made up of formal business networks and more informal personal contacts. Formal networks might include Business Chambers and Federations; what might be viewed as a gathering of society’s business leaders. These networks

have been identified as a significant barrier to business ownership by women and a doubtful source of peer support and referrals (Fielden et al. 2003; Klyver & Terjesen 2007; Kumra & Vinnicombe 2010). This raises questions as to their value for young women as they look to those from whom they might learn about effective leadership. Informal, personal networks have emerged as the most frequently mentioned resource utilised by women business owners, with family and/or spousal support of importance, particularly when battling persistent traditional gender roles and attempting to balance dual roles of family and business leadership (Carter et al. 2001; Fielden et al. 2003; Werbel & Danes 2010). Young women may lack value in such key informal relationships from which they might receive active help, finance or emotional support. Further, questionable support from wider family and friends may more acutely disadvantage young women, presenting a deficit in the social capital they bring to their venture in terms of accessing financial resources, emotional support and loyal and/or unpaid family workers (Barclays 2001).

A particularly important element associated with social capital development concerns mentoring, the relationship between someone with advanced knowledge and experience and a more junior person who seeks personal and professional development guidance (Fowler et al. 2007). Minniti et al. (2005) suggest that mentoring support can be considered as crucial as education, work experience and role models in boosting positive attitudes towards business ownership by aspiring female entrepreneurial leaders. Mentors can provide role models of best leadership practice, engaging their mentees, essentially as entrepreneurial apprentices (Fielden et al 2003; Latu et al 2013; Timmons & Spinelli 2009). A lack of female mentors able to empathise with young women business owners in terms of the leadership challenges they face is a barrier to effective mentoring (Allen & Eby 2004; Fielden et al. 2003). Anxiety and perceived scrutiny (Fowler et al. 2007), or fears of sexual harassment and innuendo, appear to present mixed-gender mentoring relationships as relatively limited in the functions they provide (Allen and Eby 2004).

In light of this discussion, the current research reflects on the journey of young women developing their leadership capabilities and business ownership ambition as little is known of this cohort's experiences in pursuing such roles. We suggest that key factors determining success in business ownership are the capacity to develop access and utilise appropriate social and human capital. Youth and gender means young women are unlikely to have acquired sufficient levels of such capitals to make the pursuit of their business leadership ambitions a 'safe bet'.

Methodology

Following Eisner's (1991) urging that individuality, personality and attributes of people involved in the research process are recognised, a qualitative approach was adopted for this study of around leadership. Such an approach allows participants to give voice to their sometime messy and ambiguous individual histories and lived experiences, and challenges the researcher to identify, interpret and communicate emerging key themes, providing rich descriptions and essential insights into the participants' life-story (Turner & Mavin 2007).

The research process was based on semi-structured, in-depth, exploratory interviews with 18 young women business owners who had, collectively, established 16 businesses in a range of sectors. Table 1 provides information on the young women participating in the research and the businesses they established. Criteria for selecting participants were that they fitted the profile of young people offered assistance by the UK business competition by Shell*LiveWIRE*; meaning they were aged between 16-30 at the time of business start-up. In addition, participants

were drawn from short-listed female candidates on the ShellLiveWIRE “Young Entrepreneur of the year Awards” and were winners of ShellLiveWIRE local awards.

Interviews were conducted over an 18-month period. The interviews which lasted on average, one-and-a-half hours, were recorded and transcribed verbatim. They generated a wealth of rich data from which key themes and events related to the concepts underpinning the study were identified. A manual coding protocol was developed for the line-by-line analysis of transcripts, facilitating the emergence and exploration of common themes, patterns and relationships across transcripts and the identification of outlying issues. The longitudinal aspect of the study allowed findings arising from initial interviews to be reflected and built upon. At the outset, a number of areas were identified from the literature which required examination in greater detail, such as the impact of prior work experience and education, the role of family and friends, instances of age and/or gender discrimination and problems arising from support networks for business venturing for young women business owners. Later interviews sought deeper insights on the impact of barriers arising from deficits in human and social capital at start-up. Table 2 summarises the linkages between themes emerging during discussions in the earlier parts of the empirical process and their further exploration and confirmation in subsequent in-depth interviews. Detailed analysis was facilitated through the use of NVivo.

Table 1: Characteristics of interviewees and their businesses

	Business	Age at start-up	Marital status	Highest level of education	Employment history		
					Similar to new venture	Different from new venture	Same time as new venture
F1	Contemporary ceramicists	26 26 27	Co-habiting Co-habiting Single	Masters (Fine Arts) Masters (Fine Arts) Degree (Fine Arts)		Retail Restaurant Childcare	
F2	Horse eventing/competition yard	19	Single	A Level (Biology, Geography)	Stable assistant		
F3	Preschool class	27	Married	Degree (Food technology)		Food technology	
F4	Recruitment agency	27	Married	Degree (Business Studies)	Recruitment consultant		
F5	Bespoke holidays	29	Co-habiting	Masters (Administration, Law)		Lawyer	
F6	Giftware	26	Married	Degree (Business Studies)		Marketing asst.	
F7	Cat boarding	23	Co-habiting	Degree (Law)		Lawyer	
F8	Private childcare	25	Married	Degree (Psychology)	Childcare sector		
F9	Trampoline coaching	27	Single	Degree (Landscape Architecture)			Fire-fighter
F10	Bespoke jeweller	22	Single	Degree (Fine Arts)	Jewellery design		
F11	Exercise clubs	25	Single	Degree (Fire Safety Management)			Classroom asst.

F12	Healthfood	18	Single	AS Levels (HE, Music, Chemistry)			
F13	Dietician	27	Married	Degree (Human Nutrition)			NHS dietician
F14	Fashion design	25	Co-habiting	Degree (Graphic Design)			Graphic designer
F15	Cider producer	22	Single	Degree (Travel, Tourism)		Event co-ordinator	
F16	Animal hydrotherapy	25	Married	BTEC HNC (Business Studies)			Finance manager

Table 2 Thematic linkages marking progression of the research

Themes emerging from literature	Early research meetings	Later research meetings
Educational background	Relevance of education Support from educators	Business skills Subject-specific knowledge
Prior work experience	Nature of prior experience Relevance of prior experience	
Age	Perceived/real age discrimination	On-going difficulties-age
Gender	Perceived/real sex discrimination	On-going difficulties-gender
Networking	Purpose of networking Nature of networking: formal/informal	Network composition Value of networks Challenges in networking
Mentors	Access	Duration of relationship, Demographic/ Professional relevancy of mentor

The qualitative researcher is bound to ensure the trustworthiness of research reported and strategies to do so (Guba and Lincoln, 1994; Schofield 1993). Dependability was established by demonstrating that findings were not a fluke but reasonable constructions of events. This was achieved through offering participants opportunities to confirm and amend a copy of their interview transcripts. To ensure credibility, findings were re-presented to participants for additional comment; transferability was assured by comparing findings from the research across 18 participants. Finally, the progress of the research was the subject of critical external review by auditors to establish the extent to which conclusions drawn by the authors from the data could be viewed as the most reasonable.

Findings

The research sought to explore the influence of social and human capital in defining the prospects of young women as emerging entrepreneurial leaders. We report on the findings, with respect to the accumulation of human capital (education, prior-work experience and gender) and social capital (around formal networks, family, friends, teachers and mentors).

Human capital issues

Educational Background: As indicated in Table 1, 15 of the 18 interviewees held a university degree, with three attaining post-graduate qualifications. The youngest interviewee (F12) possessed the lowest level of education, leaving school midway through her ‘A’ levels to start her business. Respondents fell into two groups, those who held business-related qualifications or whose courses required them to study business, including accountancy and/or marketing, and those whose degree provided subject-specific knowledge and skills around which they subsequently built their business. For example, those within company F1 believed Fine Arts degrees had inspired their product range, while F10, a jewellery-designer, stated she “...would never have had the skills to set up a workshop without going to university”.

Over a third of interviewees across both groups recalled experiences from their formal education when teachers/lecturers failed to provide encouragement for those interested in business ownership. For instance F4 believed that in her Business Studies degree: “the focus was definitely on people who’d be working for a large organisation with them all used in case studies and the expectation that that’s where you’d end up”. F2 reflected: “... school in general never really helped or encouraged me. It was never, ever put to me that this was an option. ... At school, it was all ‘university, university’ or else ‘go get a job’. It was never said, ‘... this is an option that you can do’”.

A third of interviewees noted that careers advisors in schools/universities failed to promote business ownership as a career option. For example, F9 noted, “...they don’t even touch upon starting a business or being your own boss ... It’s all about going to university and then doing a job for someone else”.

While interviewees recognised that having a third level qualification helped them develop soft skills and aptitudes for business ownership, including determination, motivation and organisation skills, most believed their educational experience did not prepare them for some of the practical challenges of business leadership, especially as young, inexperienced women.

Prior Work Experience: Despite their youth, all but one interviewee had at least one year’s full-time work experience prior to start-up, the exception being F12, the youngest interviewee with no experience at all. She commented: “... I did struggle ... it was hard getting knock-backs when you’re treated like you don’t know anything because you’re just out of school”.

Of those with prior work experience only four established businesses in areas identical to their prior employment. F13 set up a venture as a private dietician while employed in the National Health Service. F2 noted working in an equestrian yard during her gap year was: “... good because I could see a load of opportunities that my boss missed out on”. F10 felt her placement year at a jewellery workshop sowed seeds for her own workshop while F4 worked as a recruitment consultant in America and Scotland before starting her own agency.

The remaining interviewees started businesses in areas completely different from their prior employment so had, essentially, separated themselves from a key resource of their accumulated experience in terms of existing human (and social) capital. For example, F3 had acquired an educational franchise after working for 10 years in the food sector and F15 had been employed as an Events Business Coordinator before turning to cider production.

Age and gender: Socio-demographic elements of human capital, including age and gender, had had a lasting and direct impact on many aspects of the interviewees’ business experience and their dealings with stakeholders. For instance, F7, F10 and F12 recalled instances of age discrimination when attempting to access start-up finance, with a comment from F10 being typical: “a lot of the banks wouldn’t give me any money, a loan, because of my age and because I didn’t have any financial background”. F2 recounted many experiences when she felt disadvantaged by her youth and inexperience, leading her to co-opt her father into the business as a partner so, “...I could go to banks without being laughed out of the room”.

Four interviewees believed that, along with their youth, their gender presented an additional challenge in pursuing business ownership. For example, F15 believed she was not taken seriously in the highly competitive licensed trade based on a combination of age and gender bias, as her capacity to lead her venture was devalued by those around her: “...this guy was really patronising ... I’m a woman and I’m really young, the two mixed don’t work at all. He just thought I was this crazy little farmer’s daughter ...who decided she was going to make her own cider and he just thought I was away with the fairies”.

Similarly F6, a manufacturer of contemporary giftware, recounted difficulties when she approached potential suppliers: "... if I were a bloke or even an older woman turning up and asking these questions they'd be listened to instead of 'here's that silly wee girl again'". F3 recalled difficulties she felt she encountered because of her gender when purchasing her franchise: "I was made to feel that I was just this wee girl. Needless to say I wasn't this wee girl but I really had to work hard at pushing myself on, to get past those attitudes".

Interviewees expressed clear views that their youth and gender had impacted on their efforts to lead the development of their business, particularly with respect to relationship with their banks, customers and suppliers. They believed their career as a business owner would have been easier, with fewer barriers, had they been young men starting a business venture.

Social capital issues

Formal Networks: The attitudes of research participants were mixed regarding membership of formal business networks, although the majority initially saw their value. Networks offered the prospects of accessing more established entrepreneurs with higher levels of leadership experience from whom they hoped to learn vicariously. Nine of the 18 women, at one point, held membership of mixed-gender networks, including the Federation of Small Business or Chamber of Commerce. Seven, however, had not renewed their membership, citing failures to provide contacts, information, services or "value for money" to support them in business. Formal "Women's Networks" fared little better. While some, including F5, "... warmed to the women-only idea because I know that business brings more difficulties for women", others complained about an unsupportive environment within women's networks, and expressed disappointment at finding other established members "overly-competitive", "hostile" or "excluding them from established cliques".

Support from Family and Friends: Interviewees, in almost equal numbers, recounted positive or negative reactions to their entrepreneurial ambitions from family and friends, which impacted on their belief they could pursue an entrepreneurial leadership role. Nine interviewees recounted little, if any, support from parents when announcing their business ownership intentions. F9's parents were "horrified, as they are at most of [her] decisions" and F6 commented "... my mum thought I was a bit too green, too naïve to do it", continuing, "... she was horrified and like, 'don't be silly, you can't, you're young, you're a woman'".

Two of the 11 respondents who were married or co-habiting described indifference and, at times, hostility directed towards them by their partner/spouse who failed to appreciate the pressures they faced. F16 recalled her husband's initial 'support' for her career but confided: "I don't know what kind of support he had in mind. He doesn't help me, he complains that I'm working too much and he just gives me a hard time". F3 also faced familial opposition – her parents remained disappointed she had left her job to start her business while her husband's initially apathetic attitude turned to hostility. Recalling an instance when she had turned to her husband for support, she had encountered a sharp rebuff: "... all I wanted was a shoulder to cry on and he said, 'well, you started it, you got yourself into it'".

Almost half of interviewees reported that friends demonstrated negative attitudes ranging from mild indifference to outright resentment. It was felt disapproval stemmed from jealousy, frustration and their own bias regarding socially-acceptable jobs for young women. F12 told how her friends could not understand her determination to lead her own business: "... I've lost touch with quite a few of them. ... It's hard because they're ... just not on the same wavelength anymore".

Mentors: Almost half the interviewees had been assigned formal mentors by local enterprise agencies. Feedback was mixed but, on balance, suggested an appreciation of the value from participating in a mentoring programme, with mentors having a positive effect on their confidence to lead their new and developing venture. Four interviewees felt their mentor relationship was 'valuable' or 'worthwhile', while three saw it as 'limited' or 'worthless'.

For those without formal mentoring support a lack of access to a mentor was a continuing concern. F13 for example, cited the absence of a mentor as a key barrier to her business ambitions feeling that: "...A mentor from the word go would've been very useful because there are things you can sort of work your way through yourself, but someone else would be able to advise you on a better way".

None of the interviewees with a formal mentor reported a same-sex mentoring relationship – all had older male mentors with diverse business backgrounds. Despite this, no cross-gender mentoring relationship appeared to have been limiting, with no reports of discomfort and no stated preference for an alternative female mentor. Rather, it appears that the young women viewed their mentors with both professional regard and genuine affection, including F10: "He reassures me and tells me that I know my own place here and ... reminds me to keep an eye on the cheque book and to pay myself. ... I think he's great, he's almost like a teacher or a favourite uncle". Further, certain mentors were genuinely concerned about their protégé's financial and emotional wellbeing, with mentors assigned to F1 and F10 maintaining contact even after the formal relationship had ended.

Discussion

This paper explores aspects of human and social capital in defining the prospects of a cohort of young entrepreneurial women business leaders. Over the period of the research a number of issues became increasingly crystallised in participants' thinking. First, the prevailing culture still viewed entrepreneurial leadership as an inappropriate activity for young women. Secondly, they felt that education failed to prepare young women for business venturing or in building self-confidence, with educators lacking appropriate experience in entrepreneurship. Thirdly, as young women, compared to other groups of older women and young men, participants found support agencies to be of limited value. Finally, attitudes from those they might look to for support for their efforts, close family members to others already in entrepreneurial leadership roles continued to reflect established traditional views especially towards young women in entrepreneurial venturing.

In terms of the development of human capital our findings suggest a lack of support within the education system for young women wanting to pursue business ownership. In addition to the perceived irrelevancy of subject matter within the education system, interviewees believed that their teachers/lecturers/advisors lacked appropriate knowledge and experience themselves to be able to support their business ownership ambitions. The focus was higher education and employment as an appropriate career path for young women with business ownership and entrepreneurial leadership seen as an inappropriate path for young people generally, and young women in particular. Education reinforced traditional views and to arrest the development of appropriate human capital, specifically the self-confidence for development of an entrepreneurial leadership career (Carter et al. 2001).

A socio-demographic dimension of human capital, increasingly recognised in research, concludes that gender has a significant bearing on the business venturing ambitions of women (Shaw et al. 2001). Traditionally-held perceptions regarding gender-appropriate roles for men and women, and instances of perceived or real age/gender discrimination, continue to have a detrimental impact on the leadership ambitions of the majority of participants, reinforced by

negativity of key influencers such as parents and relational partners, including spouses. In addition, participants' youth and their perceived immaturity, presented problems with cast enactment with crucial contacts, including banks, customers and suppliers. Five interviewees encountered such difficulties accessing funding that they felt forced to bring parents or a spouse into their business as partners or co-directors in order to lend 'credibility' and secure loans, but undermining them in their own eyes and in the eyes of others as aspiring business leaders (Duncan & Loretto 2004; Heilbrunn 2004). Women with limited human capital are more likely to encounter difficulties in the scenario enactment leadership dimension as they may lack the knowledge to identify the opportunity in the first place or conceive a more limited future scenario for the development and growth of their venture.

With respect to social capital, issues emerging from our research address the role of both formal and informal networks. Extant literature suggests that a perceived absence of formal, structured women's networks (Fielden et al 2003; Klyver & Terjesen 2007), together with an inability to penetrate 'old boys' networks (Timberlake 2003), present significant barriers to women's entrepreneurial ambitions and development as leaders. Our research identified how, despite the wealth of networks available, including many developed around women-only formats, the young women's experiences were generally unfavourable. Whether mixed-gender or women-only-networks, their value was seen as limited, calling into question the standing of members as leadership role-models for younger, emergent leaders. Mixed networks were considered to be too "female unfriendly" and male-dominated, while female-only networks were seen as competitive and unsupportive, inclined towards impenetrable cliques. What emerges is a desire for networks which are much more sensitive to the needs of young people, and young women in particular who aspire to be business owners.

Interviewees recounted different experiences regarding more informal networks such as support from family/spouses/partners/friends. Ljunggren & Kolvereid (1996) suggest that support of such contacts is of greater importance to female than male business venturers. Lack of such support may be a particularly significant barrier to the ambitions of young women owners (Barclays 2001), leading to difficulties in accessing financial, practical or emotional support needed to address knowledge, skill and resources deficits (Davidsson & Honig 2003). Interviewees' experiences ranged from those whose partner/spouse/parents were "on-board" as co-directors or employees and supportive of their leadership ambitions, to those who operated their businesses despite undermining hostility and negativity. Interviewees with supportive families acknowledged their fortune at being able to call on such support. Some young women, however, encountered apathy, negativity and hostility that undermined their leadership ambitions, based on beliefs that they were too young and/or too naïve to own their own business, and that business ownership was an inappropriate career for young women, pointing again to issues of cast enactment.

Our research also adds to the debate around appropriate mentoring support for aspiring young women business leaders. Fielden et al. (2003) suggest that mentors should ideally reflect the gender, culture, class, educational attainment and domestic circumstances of 'mentees', and Allen & Eby (2004) suggest that female mentors are best placed to empathise with women entrepreneurs facing challenges of business ownership. Latu et al. (2013), reflecting work of Young et al. (2013, 444) and their work on the influence of female role models in positively impacting on women's choices in traditionally male-dominated fields, also suggest that a way to counteract the "... negative effects of stereotypes is to expose women to counter stereotypic exemplars in their own group: women who succeed, thus disproving the stereotype". With few women entrepreneurial leaders capable of acting as mentors for young women as aspiring leaders, such matching remains an issue. In our research, all of the women with a formal mentor

identified them as being older men from various business backgrounds, but experienced entrepreneurial leaders in their own right. Despite suggestions that cross-gender mentoring relationships may be limited (Allen & Eby, 2004; Fowler et al. 2007), no interviewee reported discomfort at working with a male mentor; rather, reports suggested older male mentors were a positive factor in development of their business and entrepreneurial leadership ambitions.

Conclusions

One might speculate that today the experience of young men and women who aspire to be entrepreneurial business leaders would be similar, if not the same; we suggest otherwise. One might also think that the experiences of young women as aspiring entrepreneurial leaders in society are the same as women generally who pursue such ambitions: again this appears not to be the case. Young women define a unique context: they face a double-bind arising from being “youthful” and “female” with all the attendant implications both positions bring. Theory also suggests that they face a further “double bind” in attempting to develop that androgynous leadership style where they draw on their natural strengths of being communal but also develop the agentic characteristics in their leadership style (Eagly & Johanssen-Schmidt 2001; Eagly & Karow 1991). Early development of appropriate human and social capital by young women is key in responding to challenges inherent in these “binds”.

With the development of social capital young women venturers need to learn how to develop density and diversity in and reachability to actors in their social network, as well as centrality as the focal person within their group of networked relationships, strengthening cast enactment. The early leadership ambition of the young women has to be acknowledged as emergent in that they are learning their trade as entrepreneurs (Kent & Moss 1994). At these early stages of development members of the focal actor’s social network, including informal and formal contacts, have opinions and ideas they want to express and demonstrate to her and what emerges is evidence of a highly shared leadership context; where power is broadly distributed and exercised within a group of individuals rather than localised in any one individual (Avolio et al 2009). Parents, partners/spouses, friends, teachers and mentors, emerge as key actors or followers of the young female entrepreneurs. Each actor, for different, often contradictory reasons and motivated by different prompts, identifies with the young women and each is committed to her achieving success in her life-choices. It is hard to imagine, for example, any parent not wanting only what is best for a daughter.

There are moderating influences, therefore, on the focal entrepreneur’s business leadership ambitions exercised by some within the entrepreneur’s group of “followers”. The view of some actors that business ownership is not an appropriate career for a young woman (including parents/spouses/partners/friends), often reflecting deeply held cultural views, clashes with others who actively support their ambitions regarding business ownership (including mentors). The perceived lack of appropriate skill sets and experience in venturing, because of youth and gender, combined with the challenges of launching a career as a business owner, emerges as an issue around task competence and experience, that draws the ire of some and the support of others.

What seems clear is that progress in the development of young women’s propensity for entrepreneurial leadership will be advanced or undermined at this early stage, depending on the responses of key influencers. There will be enablers and opposers: close familial relationships may serve to undermine leadership potential (Gupta et al. 2009). Learning to assume a leadership role as a business owner can be supported and reinforced, however, by access to professional mentors, and while access to female mentors may be an ideal (Latu et al. 2013; Young et al. 2013), in reality it seems the mentor’s gender is not the issue, rather a

supportive attitude along with significant levels of credibility, competency and experience are paramount. The presence of a professional mentor may steady the nerves of those opposers within a young woman's social network, if only by virtue of their standing as successful entrepreneurial leaders, perhaps changing attitudes and helping them to look past traditional views. This is a pivotal point where leadership potential may be encouraged or undermined at this crucial early stage. We argue that there will also be benefits from a thoughtful engagement with formal networks, be they mixed or single gender, because it is within these fora that young women might expect to meet exemplars of best practice in entrepreneurial leadership and be encouraged to develop their own competencies.

Over the period of the research, the young women demonstrated a growing resolve to fulfil their entrepreneurial leadership ambitions by demonstrating a flexibility and capability to adapt to circumstance (Eagly & Johannesen-Schmidt 2002). They acknowledged that they faced significant opposition to their ambitions; that they faced deficits in the quality of both their social and human capital, largely born out their circumstances as entrepreneurs who were both young and female. By staying the course, however, they evidenced their determination to achieve their ambitions. They lamented the paucity of practical support for young women entrepreneurs, particularly in building social and human capital. The education system, enterprise support network, lack of appropriate mentors and, for many, personal contacts were found wanting. Those 'apprenticed' to experienced and sympathetic mentors acknowledged how fortunate they were, highlighting their value as a resource. By staying the course, and building social and human capital under the tutelage of an experienced mentor and with the increasing support of their wider social network, some young women began to confirm themselves as emergent entrepreneurial leaders; challenging the *status-quo* in terms of business practice and established norms, initiating and managing consequential change, taking calculated risks with growing confidence, organising and motivating members or followers in their social network, dealing with objections and resistance and seeking to reconcile individual agendas with those in their social group.

Our research highlights the shortcomings of current education provision with respect to nurturing the business ownership ambitions of young women. Appropriate educational and training programmes are required which provide insights into the reality of business ownership and entrepreneurial leadership. Such developments have implications for the training, experience and outlook of teachers/lecturers/advisors within schools/higher education institutions, especially if they are to provide support and guidance to young women and address societal bias regarding the appropriateness of venturing careers for them.

Our research also has implications for policymakers. It provides a foundation, as Zahra (2007) suggests, on which they can map out their plans to nurture, support and harvest entrepreneurial talent, in this case particularly of young women, a greatly underutilised resource, in ways which might improve society more generally. Those charged with developing the self-employment agenda through networking and mentoring support should recognise dissatisfaction with existing service provision and young women's beliefs that current initiatives fail to help them negotiate barriers because of age, perceived immaturity and gender. This might include a dedicated network for young entrepreneurial business leaders, regardless of gender, and greater engagement of formal mentoring arrangements to support young women who aspire to be business leaders

Constraints in social and human capital at start-up can have a long-term effect on business performance (Carter et al. 2001). By profiling the particular experiences of these young women, and identifying some of the barriers they encounter, it is hoped that we have fuelled a debate which will lead to enhanced support for young women to assume entrepreneurial

leadership roles in society and choose business ownership as a preferred career option; that the sustainability of their start-ups will be strengthened; and that up-front knowledge of potential barriers will assist them to navigate round and overcome obstacles which might otherwise threaten overwhelm them.

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Enterprising Networks Generating Social Capital

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Enterprising Networks Generating Social Capital

Principal topic

Festivals and organized gatherings to create markets for cultural and artistic products have increased in importance recently. Most research view the impact of festivals and events in a region as a strong stimulus for economic activity, but the long term effects has been reported to have shown mixed results in terms of employment creation and long term investment (Polèse, 2012). No 'one size fits all' approach can measure the impact of social capital therefore scholars have turned their attention to a variety of issues to investigate this (Litvin et al., 2013).

Increasingly scholars turned their attention to the cultural grouping and social classes of festivals (Altanasi et al., 2013; del Barrio et al., 2012). Festivals and special events offer the opportunity to develop and market aesthetic, social and cultural products and values. Festivals have shown to be a strong contributor to the need of belonging, cultural grouping and social cohesion (Lewis, 2012). Cultural values and norms also determine the norms and value of the festival (Moeran & Pedersen, 2011). The social impact of the special events lies then in that these festivals can bring communities together and enhance relations (Schulenkorf et al., 2011).

Little research focuses on the entrepreneurs at these festivals. The measurement of the social capital at special events is mentioned to be a challenge (Litvin et al., 2013). We use social cohesion theory (Friedkin, 2004) and entrepreneurship literature (Welpé, et al., 2012) as a lens to look at the motivations of these entrepreneurs (Skokic & Morrison, 2011) to overcome obstacles in a dynamic market by developing social capital strategies. Social cohesion theory explains that social capital is embedded in the structure of the network and influences the development or deterioration of the network relations. In this festival setting, entrepreneurs experience a lack of resources, opportunities to market their products, seasonal changes, strong competition and new innovations as challenges, therefore the development of social capital becomes increasingly important to develop their own and add value to each other's businesses (Paldam, 2000). This market (festival or event) creates the opportunity for entrepreneurs to share ideas and trade with most transactions at these gatherings being business-to-business transactions (Guercini & Runfola, 2010). The main objectives are to 1) understand what is considered to be social capital and 2) to identify the main benefits of social capital in this setting. Social capital is developed by their involvement in the marketplace and this social interaction adds to the value of the event in general. By understanding the importance of social capital and its antecedents, we understand this industry network better.

Methodology and Findings

This study surveyed 155 entrepreneurs at the Aardklop National Arts festival held from the 24th to the 29th of September 2013 in Potchefstroom, South Africa with individual interviews with the vendor operators. Cultural events and groupings are becoming more important as marketplaces since the demand for cultural products are increasing. On average the entrepreneurs were 49 years of age and sixty one percent of them were female. The majority of the businesses was classified as micro sized businesses with only the entrepreneur (24%) involved or that they employed two employees (21%) or up to four full time employees (14%).

Respondents reflected on their social capital development and highlighted Trust (59%) a most important factor for success, followed by Commitment (12%), Ability (9%), Trustworthiness (7%) and value adding (6%) as other significant associations. An interesting mix of thirty eight percent of the entrepreneurs indicating that they have 2-5 years previous experience at the festival and twenty five percent in registering as newcomers. They indicated that they are attracted to this marketplace because of the social coherence and cultural value in their participation. They translated this as perceiving themselves to add value to networks and social capital in taking part in these events and establishing a marketplace for these cultural products and the value on developing their own social capital by their association with others in this marketplace proved to be invaluable to them.

Results and implications

The respondents displayed social capital as a process that facilitates coherence and social cohesion to facilitate increased market and business success. They work alongside each other, offer support, talk to each other and share information on new trends, products and markets, they support each other by listening and sharing their concerns and experiences. By conducting all these activities they create social capital. Social capital is aimed towards the development of resource networks, to gain exposure and to achieve higher levels of business effectiveness. The combined effort of all the festival entrepreneurs enhances their social capital because of the accumulation of social capital.

This research contributes to literature on entrepreneurial behaviour of enterprising communities, social capital and networking. We also add to the discussions on the importance of entrepreneurs, social capital and networks for business development and growth. On a practical level the insights into the main benefits of developing social capital in the festival setting offers the opportunity to educators and event organisers to better equip people working in this industry and to provide social capital development skills and opportunities. This research assists stakeholders to understand the importance of social capital in the success of these events so that better support can be offered to develop these essential business skills.

Co-Creation Orientation and Value Creation of High Technology Ventures

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Co-creation orientation and value creation of high technology ventures

Principal Topic: High technology ventures globally tend to be growth ventures and are encouraged by policy makers, due to the benefits they bring to nations. High technology ventures have the ability to shape new industries and reinvent the economic base of nations from low cost manufacturers to high value added manufacturing and knowledge hubs. These changes are associated with job creation, increased competitiveness and the attraction of investment, both in developed and developing economies. Scholarly interest in how firm-level orientations influence the activities of a firm and generate behaviours intended to create value, have been conducted on high-technology ventures in a number of settings.

Most scholars study market, technology, entrepreneurial and/or learning orientations (Hakala, 2010), however in a networked economy, characterised by cooperative relationships (Perry, 1999) and rapid technological and social changes (Castells, 2010) the internal focus of these orientations seems to overlook the resource acquisition mechanisms of high technology ventures within this context. Several scholars such as Sarasvathy (2001) and Baker and Nelson (2005) emphasise that entrepreneurial firms often use their resources at hand. A critical part of the resources available to the high technology ventures are related to their networks (who I know?).

Particularly the effectual principle of co-creation is prevalent in the high technology venture's reality. An orientation represents a firm-level adaptive mechanism which steers its interaction with its environment (Noble et al., 2002; Hakala, 2010). The high technology venture's co-creation orientation reflects the tendency of the venture to create the future collaboratively with other stakeholders.

Despite the practical prominence of co-creation by high technology ventures, it has not been explored by entrepreneurship scholars. In this paper we aim to answer questions such as

- 1) Which behaviours are indicative of a co-creation orientation?;
- 2) Which networks matter for co-creation: structure or unstructured networks; and
- 3) Does a co-creation orientation matter for high-technology firm value creation, both from a financial and non-financial perspective?

Thus the purpose of this paper is to firstly develop an empirical measure to assess the co-creation orientation of high technology ventures, secondly assess how network resources precede this orientation and finally examine how co-creation orientation is related to the financial and non-financial value created by high technology ventures.

Method In this study we used a survey research design and purposive sampling to collect data from 313 high technology ventures in South Africa in 2013. The emerging economy setting provided an ideal context to test our hypotheses, since the development of new markets in this context of often driven by high technology ventures and the resource scarcity and relatively close-knit networks enable ventures to draw human and social capital resources from this pool.

High technology ventures were identified from two established commercial databases Afriseek and ITWeb, since no public database was available.

Applying our selection criteria of firms in information technology and engineering related sectors and less than 200 employees, yielded a list of 2 382 high technology ventures. These ventures were contacted telephonically, qualified and invited to participate. Using this process 2 253 ventures remained. Following Dillman (2000) the principal decision-maker was sent an email invitation to participate in the survey, using the pre-tested questionnaire.

We received 313 useable questionnaires. Steps were taken to reduce the effects (and test for) non-response bias and common method bias. The questionnaire we used drew from existing key constructs where possible, and some constructs such as co-creation orientation was developed, pre-tested and analysed before administering the full survey. The survey included questions related to the dependent variables of perceived value creation, both financial and non-financial value creation; as well as the independent variables of structured and unstructured networks, as well as co-creation orientation. We used structural equation modelling to test the conceptual model.

Results and Implications Our study proposes an empirical measure to assess the co-creation orientation of firms, tested among high technology ventures. Our results indicate that structured and unstructured networks are moderated by a co-creation orientation. Co-creation orientation is related to financial value creation, as well as non-financial value creation in high technology ventures, namely innovation and the job satisfaction and independence the entrepreneurial leader(s) experiences. The findings of our study have practical implications for technology ventures, advisors to these ventures as well as theoretical implications. Practically it means that technology ventures should pro-actively collaborate with relevant stakeholders to co-create the future for their value offerings, since there are financial and non-financial benefits. Theoretically our findings confirm the importance of adopting a co-creation orientation in entrepreneurial growth ventures.

Evaluating Experiential Entrepreneurship Education: Are we Hearing the Nascent Entrepreneur Voice?

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Evaluating experiential entrepreneurship education: Are we hearing the nascent entrepreneur voice?

Principal topic

Entrepreneurship education (EE) is considered vital for economic outcomes such as job creation, new venture creation, and social well-being essential for vibrant, growing communities. The growth in demand for EE is evidenced by increased enrolments in higher education entrepreneurship courses; policy support (e.g. EACEA and G20) and nascent entrepreneurs' interest in learn entrepreneurship by doing events such as Startup Weekends. Non-profit organisations, such as UP Global, dedicated to fostering entrepreneurship, report a hundred per cent growth in Startup Weekend events globally from 100 000 attendees in 2012 to 200 000 in 2013; hosted in 126 countries. The immense growth in courses and events globally, demonstrate strong interest in EE. A growing trend towards action-based approaches lies within the context of dynamic rather than fixed models of entrepreneurship. Action-based approaches provide higher levels of realism in learning experiences and outcomes. A number of authors emphasise the importance of an experiential approach to EE (Laukkannen, Rasmussen and Sorheim, 2006; Sarasvathy & Venkataraman, 2011; Blank, 2013) where nascent entrepreneurs learn through practice and immersive engagement in the entrepreneurial experience, rather than through abstract cognitive processing. This growth and investment in EE has been accompanied by growing scholarly interest in the effectiveness of EE (Martin et al., 2013; Vanevenhoven, 2013). A key concern among authors is the lack of systematic evidence to demonstrate the benefits and outcomes of EE (Volery et al., 2013; Rideout and Gray, 2013; Duval-Couetil, 2013). While a number of scholars have studied entrepreneurial intentions (Peterman and Kennedy, 2003; Zhao et al., 2005; Souitaris et al., 2007) and establishment and performance outcomes (profit, growth, job creation) in evaluating EE, both measures are problematic and do not seem to take account of the dynamic nature of the phenomenon, or draw on the nascent entrepreneur's voice. In this paper we draw on the voices of nascent entrepreneurs as they share the intensity and outcomes of their Start-Up Weekend (SW) experience; as well as the rich tapestry of learning outcomes from this immersive EE experience. Against this backdrop we ask: 1) What do nascent entrepreneurs learn from the SW experience? 2) What are dominant themes they identify as being crucial to start-up? and 3) How is the emotional rollercoaster of start-up related to task outcomes of the new venture? To answer these questions we explore perceptions of learning outcomes from nascent entrepreneur participation in an action-based entrepreneurship education (EE) intervention – Start-Up Weekend, from their own perspective of the central participant.

Method

We follow a qualitative approach to understand the experience of nascent entrepreneurs, how they make sense of their involvement and what they regard as relevant in the creation of a start-up (Merriam, 2009). The context of our study is an action-based EE phenomenon, known as Startup Weekend (SW). SW represents an international non-profit movement to promote grass-roots entrepreneurial development. During one weekend (54 hours) people with diverse backgrounds and skills pitch ideas, form teams and create a start-up based on lean methodologies. The experiential event provides a fast, safe, low-pressure, meaningful learning opportunity for nascent entrepreneurs to develop their skills in a multi-disciplinary

team. Despite the realism and global impact of SW on EE, surprisingly few authors (only Cervantes and Nardi, 2012; Blank, 2013 to our knowledge) have attempted to gain an in-depth understanding of the phenomenon. We conducted 12 in-depth interviews with nascent entrepreneurs, observers and SW organisers, focusing on their individual experiences, beliefs and perceptions. After transcription of the interviews we used inductive thematic analysis to identify and code emergent themes within the data, using an iterative process, involving three researchers. Participant observer notes and online verification of claims was used for triangulation.

Results and Implications

By using inductive thematic analysis we uncovered emergent themes related to our research questions. Prominent themes were related to learning, resource acquisition and use, as well as the emotional nature of their experience. Common themes across participant interviews are the action-focused nature of the experience and the urgency to get things done. Nascent entrepreneurs later reflect on their experience, being highly engaged in the process, to make sense of what happens in the process. Getting early feedback from other participants in the SW, potential customers and entrepreneurial mentors enable them to “fail quick and fast” or to obtain confirmation of their assumptions, which is consistent with lean start-up thinking. A prominent theme across interviewees was resources. Resources are seen as other participants’ knowledge and skills, having experience within an industry, experience with a technology, or business experience, as well as passion. Resource acquisition is a prominent sub-theme related to resources being offered, attracted or sought. The founder’s ability to organise resources through various means is related to venture progress. Finally all nascent entrepreneurs talk about the emotional rollercoaster of start-up, highlighting the fun, exciting and high engagement during periods of the experience, but also talking about their disappointment and feelings of devastation when assumptions were proved wrong.

Our findings hold important implications for designing EE interventions that are meaningful, engaging and reflect realistic settings for nascent entrepreneurs. We also contribute to the debate of EE outcomes, highlighting how the emergent nature of early stage ventures relate to outcomes.

How Does A Government Business Support Program Influence Business Growth? The Case Of A Business Model Innovation Program In Australia

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How Does A Government Business Support Program Influence Business Growth? The Case Of A Business Model Innovation Program In Australia

Abstract

Economic growth is one of the top priorities for governments throughout the world and one of the main ways to achieve this is through business innovation (Amoros & Bosma, 2013). As a result, governments are promoting innovation to established and new businesses as a mechanism for economic growth. There is no unified definition for an ideal government support program to influence business growth and therefore researchers offer their own interpretation. Support programs often go beyond the value that can be created through Schumpeterian innovation, the (re)configuration of the value chain (Porter, 1985), the formation of strategic networks among firms, or the exploitation of firms' specific core competencies to take a holistic appreciation of business innovation. This study uses the data gathered through a government business model innovation program in Australia to determine its influence on business growth.

Introduction

Business growth

For almost five decades, there has been sustained and continuing interest in business growth from policy makers, practitioners and academics. However despite this, fundamental questions about business growth, how it occurs and what the consequences are remain unanswered as "little is still known about the phenomenon, and conception development has been limited" (Wiklund, Patzelt & Shepherd, 2009). Existing research is fragmented in many ways including research that engages with related questions on government policies, education in general and training. Many studies on business growth are inspired by Schumpeter's (1934) work on the mechanisms of economic development through creative destruction. The Schumpeterian notion highlights the entrepreneur as the dominant player for business growth looking at the macro view. Another popular theory on growth was developed close to 50 years ago with Penrose's (1959) publication of "the theory of the growth of the firm" and this looks at the firm level growth. However, recent research has identified that the state or the national/regional government can provide a positive influence on business growth (Huang, 2008). McKelvie and Wiklund (2010) argued that growth research should first answer the question "how companies grow" (mainly classified as growth as an outcome, outcome of growth and growth process) before prematurely trying to measure "how much growth has taken place". They further proposed Penrose's growth dichotomy should be extended beyond organic and acquisition based growth into growth resulting from franchising, licensing, joint ventures and strategic alliances. Multiple stakeholders namely business owners, policy makers, academics, funders, suppliers and customers have different interests and aspirations with respect to business growth which increases the complexity of the phenomenon (Buss & Gill, 2000).

Taking this context into account, this study takes the holistic view of growth into account when understanding the influence of the government business support program. Most of the growth studies explicitly or implicitly relate to one of a number of theoretical perspectives to derive hypothesis for empirical testing. While this approach contributes substantially to understanding in-depth the attributes of growth, it makes it hard to bring together the pieces in order to see the big picture (Wiklund, Patzelt & Shepherd, 2009). This viewpoint becomes much more applicable for a government support program when answering the overarching question of the government programs' influence on business growth, as governments' interests are mostly on macro level views at a national or regional level. Furthermore, Wiklund et. al. (2009) through

their study argued that the growth attitudes of business leaders, entrepreneurial orientation of the firm and the dynamism of the task environment within which the firms operate have the strongest influence on business growth.

Eisenhardt and Martin (2000) note that in addition to the resources themselves, the business and strategic processes are important because they facilitate the manipulation of resources into value creating strategies. Empirical studies have mainly focused on the direct link between configurations of resources and performance while less attention has been devoted to how management can utilize these resources effectively (Helfat, 2000).

Business model innovation (BMI)

In recent years, BMI has been getting substantial attention from both academics and practitioners. Since 1995, 1977 articles have been published in peer reviewed academic journals (Zott, Amit & Massa, 2011). Chesbrough (2010) has argued that a mediocre technology pursued within a great business model may be more valuable than a great technology exploited via a mediocre business model. Based on a global Chief Executive Officer (CEO) study that was done by IBM across 765 CEOs, it was found that CEOs are giving a prominent place for BMI on their agendas (IBM Global Services, 2006). Further the report stated that high growth businesses put twice as much emphasis on BMI than low growth businesses.

Scholars' views on business models can be broadly categorized into two. Firstly, a traditional business strategy concept focused on competition, value capture and competitive advantage (Magretta, 2002, Makinen & Seppanen, 2007, Mansfield & Fourie, 2004). Secondly, the business model concept as a customer centric value creation phenomenon outlining a firm's value proposition for its various stakeholders as well as the activity system the business uses to create and deliver value to its customers (Roos, 2014; Roos, 2013; Roos 2012; Burton, O'Connor & Roos, 2013; Roos & Pike, 2009; Chesbrough & Rosenbloom, 2002; Mansfield & Fourie, 2004., Zott & Amit, 2008, Seddon, Lewis, Freeman, & Shanks, 2004). According to Richardson (2008), Shafer et al. (2005) and Casadesus-Masanell and Ricart (2010), business model is how activities are put together by a business to execute its strategy.

If businesses are to innovate their business model, one promising approach is to construct maps of the existing business model. This allows business leaders to re-configure the functions or components of the business model in order to experiment with alternate combinations (Chesbrough, 2010). An important parameter that should be considered during experimentation with the business model includes the cost of conducting the experiment, both in terms of direct cost and the cost of failure, if the experiment does not yield the expected outcome, the time required to obtain feedback from the experiment and what is learned from the experiment (Thomke, 2002). Discovery driven planning is another approach to model unknown assumptions that they can be directly experimented with to clarify the results of an economical viable business model configuration (McGrath & Macmillan, 1995). Effectuation processes is another option to create new business models (Sarasvathy, 2001). Here the main premise is that actors do not analyse the environment so much but take actions that creates new information. There is a strong bias in effectuation for action over analysis, because there may be insufficient data available to analyse one's way towards a new business model.

Doz and Kosenen (2009) discuss the need for businesses to have agility if they are to be able to transform their business models. This demands business leadership mental models in the perception of the environment, unity among the team and ability to allocate resources to support new business models.

This study views BMI as anything a business implements that alters how they operate as the government support program is built on the principles of BMI and the business model is intended to be influenced by the government program.

Government support programs

In the last decade or so, many governments have paid increasing attention to policies and programs on innovation in their countries to foster business growth and economic development (Minniti, 2008). Significant work has also established that activity in and around innovation and entrepreneurship has important social implications (Chell, 2007). As a result, policy discussions have centered on the idea that governments seeking to stimulate their economies should reduce constraints on innovation and entrepreneurship (Acs et. al., 2004; Minniti, Bygrave & Autio, 2006). Government influence on businesses has mainly been researched as a macroeconomic policy level construct. However, direct support programs, supporting economic institutions and value placed on businesses and entrepreneurship within society has also been identified as ways through which governments can influence businesses (Smallbone & Welter, 2001). Moreover, government involvement in innovation is important as it underpins a number of activities within systems of innovation that act to reduce the levels of uncertainty felt by individual businesses within the private sector (Hall & Williams, 2008). Individual businesses also need the assistance of government programs as individual businesses may not have the necessary competence, resources, and legitimacy particularly in a national or regional context (Van de Ven, Polley, Garud & Venkataraman, 1999). Government involvement needs to be better defined, however, as failures in innovation occur because of the inability or unwillingness of the government to facilitate and promote the business growth (Breznitz, 2006). O'Connor et. al. (2014) argue that the business growth potential is moderated by individual characteristics, business characteristics and government policies and programs.

For instance, studies show picking the winners and providing government support by way of programs or research and development subsidies has positively influenced business growth in Germany (Hussinger, 2008; Almus and Czarnitzki, 2003; Czarnitzki and Hussinger, 2004). Levén, Holmström & Mathiassen (2014) through their study on the Norwegian tourism sector found that government intervention to facilitate collaboration among different operators to have a positive effect on innovation. Rasmussen (2008) reveals the case of Canada with regards to project commercialisation. Findings are that government programs providing resources for projects, encouraging innovation through programs and creating networks between commercialising organisations to have a positive influence on the successfulness of the projects.

However, little is known about the potential influence of government programs on business growth and the research in this area has been relatively slow in the Australian context. The available literature is primarily from US and European regions. Wagner and Sternbern (2004) argued that policies and programs need to be tailored to the specific institutional context of each economic region. Thus studying the influence of government business support programs' influence on business growth in the Australian context is of significance.

Summary of literature review

Governments are mainly interested in macro level growth. Figure 1.0 show how individual businesses fit in the macro environment based on the discussed literature. In reality it's the compound effect of the individual businesses that enable macro level growth. Furthermore, BMI is a phenomenon that acts primarily within individual businesses while components of the business model interact with the environment. Refer Isenberg (2010) for a complete discussion on environmental factors that influence businesses. Government being a key player

that can influence the business environment leads to the suggestion that a government support program can act as an ideal mediator between individual businesses and the macro environment. We therefore in this study seek to identify the positive influences of the government support program towards the changes in the business model that may be realistic preconditions for growth of individual businesses.

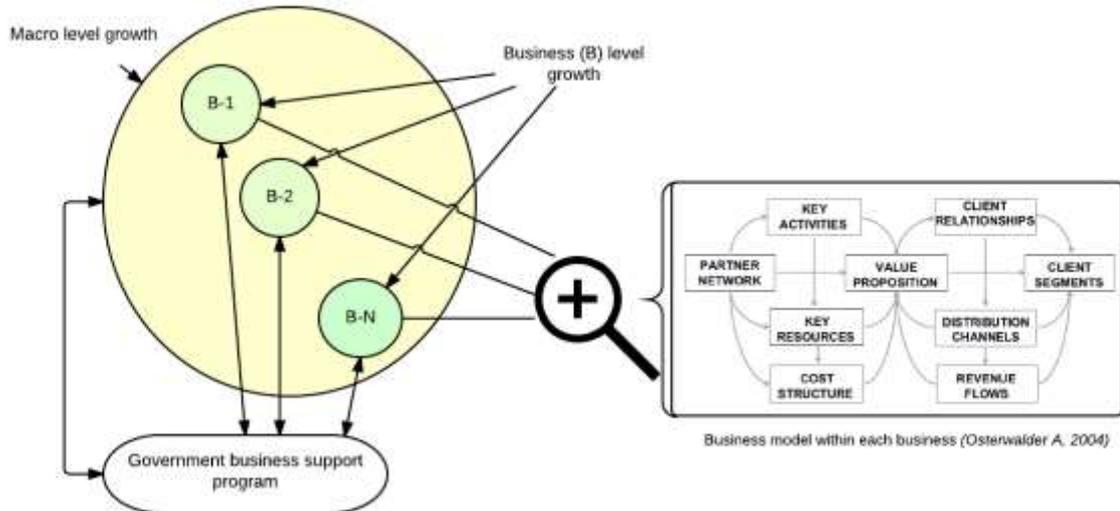


Figure 1.0 – Summary of the literature review

Data and methodology

In this paper, we analyse the influence of a BMI program on business growth, taking the holistic view of growth into account. Contributing to the literature discussed in the background section, how the government support program has influenced the participating businesses in a positive manner is studied in the analysis. To undertake this study we are guided by two research questions.

RQ1: How does the government support program influence the comprehension of BMI strategy process?

RQ2: How does the BMI program influence a change in strategic approach towards business growth?

Through this study, only the influences towards growth is studied not the actual growth that has taken place. The research is drawn upon the field of inquiry informed by case study methods (Yin, 1994).

The boundaries of the case are defined by the three BMI programs conducted in Adelaide, South Australia and Geelong, Victoria for existing business leaders. Table 1 profiles the participating companies. The program is delivered over seven one-day modules, each approximately three weeks apart. Each course is limited to non-competing firms. Each business is expected to have three business leaders participating. Business leaders are defined here as the senior decision makers of medium to large businesses who participated in the BMI program. Across the seven modules the areas that are covered included but were not limited to holistic design, enabling technologies, intellectual capital management, value logics, cost structures and revenue models.

The case study research deploys exploratory and interpretive approaches to examine the perceptions of the participants. The case study is defined by its in depth collections and analysis of a range of informing data in order to understand the particular circumstance (Leedy & Ormrod, 2001). This includes observations, interviews and documentation. This study includes semi structured interviews carried out with the program participants, workshop documentation, workshop surveys (see Appendix B) and observations during the workshop. One or more of the researchers participated in the program regularly and interacted with the participants often. Notes taken on these interactions were also used in the analysis of the study. The follow up interviews were either in person or as telephone interviews with the participants of the program. Open ended questions were prepared (see Appendix A) with the objective of obtaining responses for the two overarching research questions to minimise the effects of any biases. The initial questions formed a basis on how the participant perceptions and understanding had been altered by the BMI program. The final set of questions formed an understanding on the program's influence towards business growth.

Company Code	Domain	Category
Company 1	Household manufacturing	Small
Company 2	Medical equipment manufacturing	Large
Company 3	Genera engineering manufacturing	Large
Company 4	Manufacturing consultative services	Medium
Company 5	Industrial automation	Medium
Company 6	Component manufacturing	Large
Company 7	High tech design & manufacturing	Large
Company 8	Confectionary manufacturing	Large
Company 9	Electronic design & manufacturing	Medium
Company 10	Industrial automation and control services	Large
Company 11	Engineering consulting and manufacturing	Medium
Company 12	Packaging solutions	Medium
Company 13	Safety products manufacturer	Large
Company 14	Component manufacturing	Large

Table 1.0 Summary of the businesses participated in this study

NOTE Small 3-15. Medium 16-200. Large 201-500 employees

A total of more than 100 data points (both interview data and written feedback) were analysed in the study using NVivo to determine the emerging themes and propositions that are presented in this paper.

Findings

The study provides two categories of findings in response to the two research questions. Our first finding (refer Table 2.0) revealed the key areas that have been of value towards changing the perceptions of the participants of the BMI program. The second finding (refer Table 3.0) suggested the different ways the business was influenced to change as a result of the BMI program, positioning the firm for business growth. The analysis was designed to answer our research question, 'how does a government program influence the growth of businesses?'

RQ1: How does the government support program influence the comprehension of the BMI strategy process?

Coding	Description	Sample text	No of items coded
Improved processes	Improved ways of doing business	We talked about processes and utility. Maximising utility of employees is one to increase productivity and reduce waste.	7
Different way	Challenging what's already being done	We were in an existing mindset, existing principles and accepted ways of doing things. We have many forays into doing many things in different ways. Perhaps we didn't have a roadmap and the confidence in doing new things. With the examples and guidance, he showed us things can be done differently and be a bit more adventurous.	12
Ideas and innovation	Creation of new technology and new ideas	I don't think a lot of people really understand that concept; when they get a hold something new and innovative to enable new revenue streams or profitability, they don't realise they need to change the business model. They keep trying to hammer at new innovation through the same old business model and it's a recipe for failure. I don't think this is well grasped and understood [if not for the BMI program]. That did stick out and that was a key point.	14
Development of systems	Taking things to the next level	Many examples were pulling down existing structures and developing new structures. I also got a sense that there is a lot of stuff there that needs to be just tweaked in, in a new way [to the existing system]	3
Holistic view	Considering the entire ecosystem	We are trying to implement new technology without changing the business model and therefore it's not going to succeed. That was probably worth for me for attending the course.	6
Value proposition	Providing value to stakeholders and primarily the customers in different areas	Got us to look at business; what areas do you (the company) address, and also really nice basic premises like services as add on and value adding, basically moving us up the value chain	21

Table 2.0 Coding summary – Q1

RQ2: How does the BMI program influence a change in strategic approach towards business growth?

Coding	Description	Sample text	No of items coded
Mergers and acquisitions	Business/business units acquired/merged with other businesses/business units	Effectively we were able to use the learning's through the program plus the knowledge our customer [acquirer], helped us to position and convince so that we were purchased as a company by them	5
Extended offerings	Increasing value to customers	Realistically we apply as we speak. We launched a new company already, mainly to cater to a different market than we currently operate in.	13
New services	New services that didn't exist made available to customers	We took the pricing and value module we talked very seriously. We talked about what else we can offer and we filled that gap	7
Strategic planning	Resource allocation aligning with goals	The mind set earlier was, not many customers are there and we didn't charge them. Now we have 2 if not 3 options for delivery itself.	16
Better focus	Primary areas of focus with less dilution of focus	It was a dramatic transformation to our business moving away from a family owned business. We were segregated, geographically locations and the markets we served. We sold a part and now focusing on the other.	3
Increased revenue	Growth of income/revenue	Within the same category, now we have two price points and we've increased our margins. In addition, we now have a policy to charge for insulation bags, if a customer wants it. Earlier we just gave it to them [customers]	5

Table 3.0 Coding summary – Q2

The general perception of the participants was that the BMI program influenced their views on the business. For instance, one Chief Executive claimed that while the term BMI was nothing new, the relevance and the significance of BMI to his organisation was clearly understood only after he attended the first session of the program. The relevance was not only high at the big picture level, it was also apparent that the participants found the majority of the topics covered in the program to be highly relevant to their respective organisations. However, based on the role of the individual and the focus of the organisations, the interests on the topic varied, which had an impact on the value proposition of the program. For instance, while some participants felt ‘enabling technologies’ to be an effective and relative topic, some others felt it wasn’t closely related but was more of a ‘nice to know’ material.

Most of the participating companies are shifting from their original business model to new business models. In coding the data in response to the second research question, direct and indirect items were coded. Direct was the growth indicators that were attributed to the BMI program and indirect was the indicators that would influence towards business growth.

A deeper analysis revealed dependency between the findings of the first research question and the findings of the second. A second level analysis was carried out in order to explain the dependency. As a result, it was found the change of perception and understanding of BMI opening up the mindset of the business leaders towards critically looking at the current practices in order to determine opportunities for growth. It was also found that the role of the facilitator played a critical part throughout the program on influencing the BMI mental models of the participants.

It was apparent, many companies had their own context-specific challenges in order to apply the topics/concepts discussed in the BMI program. The majority acknowledged the fact that the current program structure could not accommodate company specific issues. However, the following recommendations were made by the participants in order to facilitate the application of the topics/concepts discussed in the BMI program:

- i. Carry out a pre-assessment of the organisational context before the BMI program and provide an emphasis on the areas that are more related and can be applied to the given contexts of the firms.
- ii. Supporting the completion of the exercises beyond the session date and providing any assistance required (eg: for the Intellectual Capital Navigator exercise)
- iii. Providing a private virtual (online) space to manage course material, support material, questions and answers in an ongoing manner
- iv. Having a series of post program application assessment checkpoints over an extended period and providing guidance to overcome the implementation challenges (eg: Obtaining and managing advisory or executive boards)

In conclusion, the BMI program challenged the paradigms of the participants, allowing them to look at their organisational challenges and opportunities from a new point of view.

Discussion

Results

All the participants found the BMI program to be effective in order to understand growth opportunities from a mental model perspective. This signifies the critical nature of the relevance and applicability of the government support program; in this case BMI.

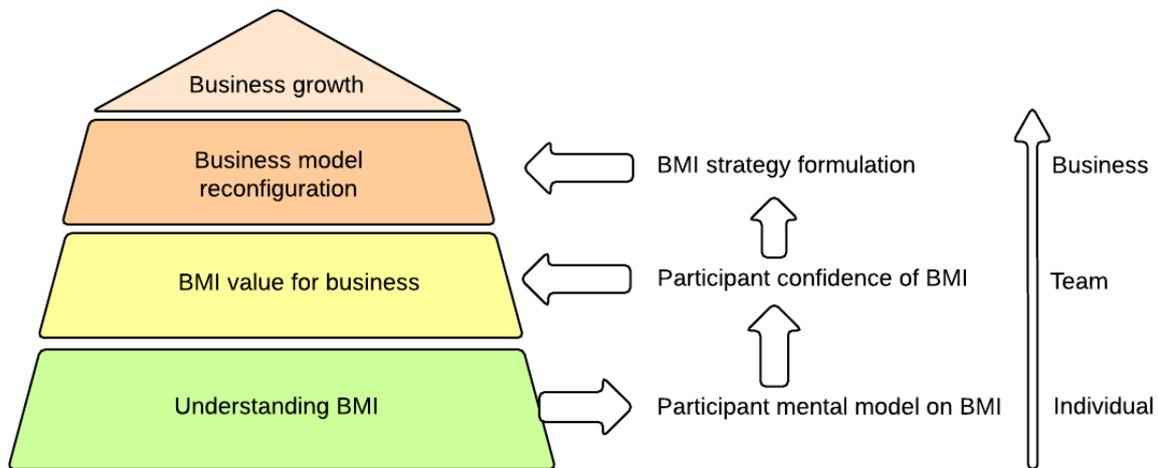


Figure 2.0 – Conceptual model – Mental models influencing business growth strategies

Figure 2.0 illustrates a conceptual model based on the key findings of the study, highlighting the interdependency of influencing participant perceptions/understanding of BMI and influencing a change of strategic approach towards business growth. Understanding BMI builds an individual level mental model on BMI among participants. These mental models are influenced by many factors in addition to the BMI program (see O'Connor et. al. (2014) for complete discussions on individual level characteristics that influence the development of mental models). This results in cultivating the confidence of the BMI program learning to contextualise the value of BMI at a business level. This in turn leads to the development of strategies towards business growth that, when executed, results in actual measurable business growth. In other words, the level of confidence of the individual mental models affects the growth strategy process, which in turn we propose will influence the outcomes for business growth.

Participants had varying levels of awareness of the BMI concepts. However, the process through which the concepts can be applied in a systematic way is found to be the immense value in positioning the business to accelerate the growth. This systematic process is found to be a key requirement in how the government program can positively influence the business growth, in line with the findings of Scott-Kemmis (2012). The BMI process followed in the study program is different to Ostelwalder (2004) model. The study is based on a systemised BMI process is based on the conceptual model presented by of Roos (2014).

Implications

All companies were seriously engaged by the concepts they learnt during the BMI program to their companies. The following are the main three cohort outcomes that can be classified:

- i. Already in the process of re-strategising the corporate direction taking all the concepts discussed in the BMI program into account
- ii. Already have identified a few short term/long term tasks, which have stemmed from the BMI program. Interested in any support that can be provided to implement the change in the organisational context and extend the application areas

- iii. Keen to integrate the concepts discussed in the program in a suitable way. No specific plans as yet

In line with the findings of Amit, Zott, and Pearson (2012) adopting the business model perspective helps business leaders to purposefully structure the activity systems of their businesses; the purposeful design and structuring of business models is a key task of business leadership. This can be an important source of innovation, helping the business to look beyond its traditional sets of partners, competitors and customers. This study with the findings also supports the argument of Gambardella and McGahan (2010), exposing businesses to new markets as a key outcome of BMI.

At the outset it was evident, the BMI program positively influenced the growth decisions of participating businesses. Some businesses at the time of writing of this paper had already reaped the benefits of the program through apparent business growth indicators. These include but are not limited to strategic initiatives that diversify the business offerings by changing the business model and strategic business acquisitions. Some other businesses have incorporated some of the key themes of the BMI program into their strategic roadmaps and business plans. However, the importance of a follow up mechanism extending the program beyond the time frame of the sessions, building more of a strategic growth advisory partnership, emerged as a key proposition. Furthermore, the importance of non-formal learning experiences during and as a result of the program emerged as another important proposition. Finally, the role of the facilitator also plays an integral part in influencing the mental models of the BMI participants. Being able to relate and illustrate the utility value with contextual illustrations, going beyond the theoretical perspectives can be highlighted. While many of the themes complement the existing literature of business support programs, this study is the first of its kind to analyse a program from the view point of the government and its influence towards business growth, which in turn responds to the overarching question of how does a government support program influence business growth?

Limitations and future research

Given the relative short time frame for the study, measurable outcomes of business growth have not been taken into account. Instead we have focused on the strategic outcomes for growth in line with the argument of McKelvie and Wiklund (2010), this study focused on how government support programs influence business growth not on how much. Future research should examine how business growth was influenced by the government support program taking measurable outcomes into account.

Cluster classification or stage classification of the participating businesses has not been carried out in this study. Future research should be carried out to understand the influence of business support programs within different types of business clusters. Emphasis should be given to who should develop and conduct these cluster specific government support programs as clusters increases the level of complexity in the context of multiple interests.

In terms of the research methodology, longitudinal studies across businesses may reveal more insights about influences on the mental models of the business leaders and subsequent business growth.

Conclusion

In conclusion, this paper has contributed in explaining how government business support programs influence business growth, taking the context of BMI program of Australia into account. Based on the findings; provided the government program design is applicable to businesses in a practical manner and firstly opens up the mental model of the participants to understand the benefits and process through which the concepts can be applied to their respective businesses; government programs can influence business growth. However,

applicability to businesses is a complex phenomenon as it is governed by many facets including the context of the business and/or the phase or stage in the business growth and development cycle, aspirations of the business leaders, influence on the business by the program participants and overall business ecosystem. Furthermore, aligning interests of the governments and individual businesses is also a challenging task in some cases, which increases complexity of designing and delivering government support programs to influence business growth. When you innovate, look at the forest, not the trees — and get the overall design of the activity system right before optimizing the details. A government program has the strategic edge to align the macro level perspectives including but not limited to clusters and demographic variables boiled down to micro level businesses through a government BMI program.

APPENDIX A

Semi structured interview guideline

Category	Question	Rationale
Basic Definitions	What does Business Model Innovation Mean to you?	To gather the perspective of the individual
Relevance	How was the BMI program related to you and your organisation?	Relevance of the program to the individual and the organisation
Relevance of Content	In a broad view the program covered; Enabling Technologies, Holistic Design, Managing Intellectual Capital, Value Logics, Cost Structures and Revenue Structures... you may be seeing some are more related than others... can you please explain what specific areas are more applicable to your organisation and why?	Relevance of the program to the individual and the organisation
Perceived Effectiveness Delivery	BMI was designed mostly to be an interactive program where the delivery is concerned and had many action learning type exercises as well. Can you pl highlight what delivery means you felt as effective and why?	To determine the means that have been covered through the program
Application of learning	How do you think the insights from the program will help to shape your organisation?	To validate the application of the learning to business strategy and development.
General	Is there anything else that you feel is important for us to know in order to make the BMI program to be more effective?	

APPENDIX B

Written feedback at end of each workshop

Category	Question
Value comprehension	How familiar were you with the topics covered today?
Value comprehension	Make brief notes of the important things you learned today.
Value comprehension	What did you find most relevant to your situation?
Value comprehension	Was there anything that changed your mind?
Course content and delivery process	How well did you understand this particular learning session?
Course content and delivery process	Is there anything else that you feel is important for us to know in order to make the BMI program to be more effective?
Course content and delivery process	What would you like to know more about in this session?
Course content and delivery process	What would you improve in the current session?
Course content and delivery process	Any other comments and suggestions?

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Entrepreneurs And The Stress-Coping-Strain Process: How Relevant Are Existing Theoretical Frameworks?

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Entrepreneurs And The Stress-Coping-Strain Process: How Relevant Are Existing Theoretical Frameworks?

Abstract

Entrepreneurship is inherently stressful. The associated costs of stress to individuals, their ventures and society are considerable. Despite its prevalence and impact, our understanding of the ways in which entrepreneurs cope with stress is limited. There is a scarcity of research, and that which exists is largely informed by theoretical frameworks forged from organisational employment settings. Based on a review of literature, we explore potential issues associated with applying organizationally-derived theory to the entrepreneurship domain. Consequently, we argue for a more nuanced approach to conducting stress and coping research in entrepreneurship and recommend that temporal orientation be considered when investigating coping in entrepreneurs given the identification of proactivity as an important factor in the entrepreneurship literature. This recommendation forms the basis for the development of a conceptual model of the stress-coping-strain process in entrepreneurs, which is presented with the aim of informing future scholarship.

1. Introduction

Considerable research on occupational stress exists outside the entrepreneurship literature, yet our understanding of the ways in which entrepreneurs cope with stress, and the implications of coping strategy use on their strain outcomes, continues to be lacking. Scholars' consideration of the stress-coping-strain process in entrepreneurship has largely been informed by adopting theoretical assumptions derived from studying occupational stress among those in organisational employment (Wincent & Örtqvist, 2009). Yet, entrepreneurs have unique characteristics and are exposed to unique stressors (Grant & Ferris, 2009). In what follows, this conceptual paper firstly aims to draw attention to the associated costs of occupational stress among entrepreneurs from individual, venture and societal standpoints. Secondly, we explore whether past research on the stress-coping-strain process in entrepreneurship is limited by organisationally derived theory and draw attention to the possibility that current conceptualisations of coping largely ignore the role of key variables in the entrepreneurship literature such as proactivity. Thirdly, we propose that a more nuanced approach to understanding the stress-coping-strain process in entrepreneurs is required and present a conceptual model of stress and coping among entrepreneurs. Implications are discussed with reference to future scholarship.

2. Entrepreneurs and the stress-coping-strain process

2.1. Clarifying stress, coping and strain

In accordance with the first major literature review of occupational stress conducted by Behr and Newman (1978, p.670), we define stress as “a situation wherein job-related factors interact with a worker to change (i.e., disrupt or enhance) his or her psychological and/or physiological condition such that the person (i.e., mind-body) is forced to deviate from normal functioning”. Clarification of coping is complex, as the number of coping responses and the number of contexts in which coping occurs are virtually infinite (Skinner & Zimmer-Gembeck, 2007). Two approaches to conceptualising coping are considered within this paper: a present-oriented (or situation-based) approach, and a future-oriented approach. The former defines coping as “efforts to prevent or diminish threat, harm, and loss or to reduce associated distress” (Carver & Connor-Smith, 2010, p.685); the latter views coping as a proactive method of risk and goal management (cf. Greenglass, Schwarzer, Jakubiec, Fiksenbaum, &

Taubert, 1999). In an occupational context, stressors are those job conditions which cause stress (Jex, Bliese, Buzzell, & Primeau, 2001), and strain is a negative outcome on an individual in response to stress (Shinn, Rosario, Mørch, & Chestnut, 1984).

2.2. A call to action

Developing the body of knowledge relating to the stress-coping-strain process in entrepreneurs is perhaps now more pertinent than ever. This claim is made based on separate yet interconnected phenomena: the first is the rise in the number of people starting their own business(es). A rise which is perhaps due to a composite of (a) the promotion of entrepreneurship by governments for its perceived economic value (see: van Praag & Versloot, 2007), (b) the increase in the number of entrepreneurship related programs offered by higher-education providers (O'Connor, 2013), and (c) the popular media's portrayal of founders as celebrities. The second phenomenon is stress. Namely, that stress is an inescapable and widely accepted accompaniment to entrepreneurial endeavours (Boyd & Gumpert, 1983; Cardon & Patel, 2013; Gorgievski, Bakker, Schaufeli, van der Veen, & Giesen, 2010; Kariv 2008; Uy, Foo & Song, 2013; Vasumathi, Govindarajalu, Anuratha, & Amudha, 2003). When experienced over long periods of time stress may result in adverse health effects.

When these phenomena are considered together, it appears that the number of business owners potentially at risk of stress-related health problems is increasing. Current estimates put the number of people world-wide either starting or running their own ventures at 388 million (Kelley, Singer, & Herrington, 2012). A recent study's observation that governments may promote self-employment due to its 'health benefits' (Rietveld, van Kippersluis, & Thurik, 2013) – when the reverse may be true – has worrying implications when we consider that empirically-based stress management solutions to combat stress-related health issues in this growing occupational group are currently lacking. Whilst some characteristics of selecting a career in entrepreneurship (e.g., high levels of control and autonomy) have been shown to contribute favourably to an individual's health (Stephan & Roesler, 2010; Thompson & Prottas, 2006), many other characteristics (e.g., longer working hours, inability to separate work from leisure, and demands of stakeholders) may contribute to stress and ultimately ill health (Boyd & Webb, 1982; Boyd & Gumpert, 1983; Torres & Mondelus, 2011).

2.3. The cost of stress

It is well established in the medical literature that a relationship exists between prolonged stress and physiological outcomes, which can influence the body's susceptibility to disease and cause adverse long-term health effects (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002; Lutgendorf et al., 2003). With 50-75 per cent of disease considered to be stress-related, it is estimated that the world's workforce loses around 100 million workdays per year due to occupational stress (Treven & Potocan, 2005). Costs associated with stress are outlined below (from individual, venture and societal standpoints).

Early research found that 55 to 65 per cent of entrepreneurs show evidence of stress on a weekly basis e.g., insomnia, headaches, and back problems (Boyd & Gumpert, 1983). Similar findings persist, with stress reported to contribute negatively to entrepreneurs' health (ranging from minor physical ailments to psychological breakdown) (Örtqvist, Drnovsek, & Wincent, 2007; Örtqvist & Wincent, 2006; Shepherd, Marchisio, Morrish, Deacon, & Miles, 2010; Stephan & Roesler, 2010). Given that entrepreneurship is an activity characterised by high levels of stress, significant costs to the entrepreneur can be expected.

Based on assumptions from prior research indicating that the performance of the entrepreneur plays a central role in the success of their venture (Shepherd et al., 2010), it is not unreasonable to assume that negative health consequences of stress are likely to impact venture performance (Jamal, 2007). For example, strain may impede an entrepreneur's ability to logically process information and, as such, could lead to poor decision-making. Entrepreneurs experiencing stress may also negatively impact their ventures through disengaging in an attempt to cope (Halbesleben & Buckley, 2004). If disengagement were to occur, the entrepreneur's venture would likely be limited in its ability to meet the demands of stakeholders.

Strain may also positively influence an entrepreneur's decision to exit their venture. While many entrepreneurs voluntarily choose to terminate their ventures, a large number are forced to close due to a range of factors including inadequate cash reserves, environmental forces, inexperience, poor products, changing markets and external stakeholder decisions (Cope, 2011; Ropega, 2011). Those who experience forced venture closure are likely to endure considerable emotional, social and financial costs as a result (Cope, 2011) (examples include marriage breakdowns or loss of the family home). Where financial adversity is experienced, increased levels of psychological distress are expected (Gorgievsk et al., 2010).

Although few studies have examined the stress-coping-strain process in relation to venture performance, there is evidence to suggest a positive relationship between adaptive coping strategies and increased venture performance. For example, a study of 469 European entrepreneurs (Drnovšek, Örtqvist, & Wincent, 2010) showed that entrepreneurs who were better able to cope with stress ran businesses with longer life spans than did entrepreneurs using less adaptive coping strategies. Similar findings were present in a study of 190 Israeli entrepreneurs (Kariv, 2008), which found negative stress impeded a venture's financial performance.

In reference to societal costs, entrepreneurs are seen as major economic contributors and drivers of economic growth by way of the roles they play in reducing unemployment, generating goods and services, and improving social welfare overall (Garcia-Murillo, Velez-Ospina, & Vargas-Leon, 2012; Stephan & Roesler, 2010; Welter, 2011). As such, the economic implications of entrepreneurs experiencing stress and related strain may also include loss of jobs for those employed by entrepreneurs, decreased revenue, demands on health and social welfare systems to care for strained entrepreneurs, and decreased levels of customer service, creativity and innovation, and performance (Ahmad & Xavier, 2010).

3. A unique occupational group exposed to unique stressors

3.1. Entrepreneurship and organisational employment: disparate occupations

Entrepreneurs have long been considered a unique occupational group (Kets de Vries, 1985). Despite this, the theoretical foundations informing research on the stress-coping-strain process in entrepreneurship is largely derived from those in organisational employment.

Whilst similarities are shown to exist between entrepreneurs and the organisationally employed (see: Jamal, 2007; Parslow et al., 2004; Stephan & Roesler, 2010; Thompson & Protas, 2006), it must be emphasised that entrepreneurship is considered to have characteristics that differ from other professions. Examples of the unique characteristics of entrepreneurship include the entrepreneurs' reasons for starting a venture, sense of responsibility, financial and emotional investment, risk taking propensity and undertaking of the venture creation process (Buttner, 1992; Miner, 1990). Entrepreneurs also tend to work in isolation (limiting the availability of support from co-workers), work longer hours (Jamal,

2007), find difficulty in separating work and family time (Perry, Penney, & Witt, 2008), experience lower accomplishment, and operate in a constant state of uncertainty (Jamal, 2007). In addition, entrepreneurs tend to earn less than salaried workers in similar areas of work and may have another job to support themselves during the start-up phase (Perry et al., 2008). As such, the sources of stress experienced by entrepreneurs are expected to be different from those of other occupational groups (Wincent & Örtqvist, 2009).

Importantly, Kariv (2008) draws attention to entrepreneurs having unique ways in which they cope with the stressors of daily life, suggesting that an entrepreneur's vision, creativity and leadership abilities assist them in transcending stressors. Additionally, Buttner (1992) cites the unique nature of entrepreneurship and its associated stressors as justification for extending the stress-strain relationship beyond traditional research of managerial stressors. She justifies this stance by noting that entrepreneurs typically lack the resources available in larger organisations (e.g., human resources and financial resources), and also that entrepreneurs may be required to work across many roles, compared to the often compartmentalised and well-defined roles of salaried workers.

With implications for the way in which we understand potential buffering effects of coping on the stress-strain process, a study by Rahim (1996), comprising 238 entrepreneurs and 288 managers, indicated that higher levels of stressor exposure should not be assumed to result in higher levels of strain. The study showed entrepreneurs to be more psychologically prepared to deal with stressors than managers and that the efficacy of stress moderators varied between the two occupational groups. This finding raises questions as to whether characteristics of entrepreneurs may influence stress-strain outcomes.

3.2. Entrepreneurs and the organisationally employed: comparative stress levels

One reason why stress and coping theories derived from an organisational context have been adopted for use in entrepreneurship may be the perception that managers are exposed to similar stress levels to entrepreneurs. Yet, findings in relation to comparative stress levels between entrepreneurs and employees are far from consistent. On one hand, it has been shown that entrepreneurs report higher levels of well-being and lower levels of stress (see: Andersson, 2008), whilst other studies have found some entrepreneurs to be worse off than wage-earners (Jamal, 1997; Lewin-Epstein & Yuchtman-Yaar, 1991; Parslow et al., 2004; Perry et al., 2008). Some studies report no difference (e.g., Oren, 2012).

One explanation for the discrepancy in comparative stress levels between entrepreneurs and employees is that existing stress measures (derived from organisational research) are not valid in the context of entrepreneurship. Recent work examining the conceptualisation and measurement of stressors among entrepreneurs shows that existing occupational stress measures inaccurately capture the nature of stressors in entrepreneurs (Grant, 2011; Grant & Ferris, 2009, 2012). Existing measures were shown to omit many of the sources of stress experienced by entrepreneurs, and some items on existing scales were shown to be irrelevant. As such, use of existing scales with entrepreneurs would render lower scores due to irrelevant and/or missing items. These findings mirror earlier observations that entrepreneurs may deal with the stressors of salaried managers *plus* additional stressors unique to entrepreneurship (Kariv, 2008). These studies further highlight the need for considering entrepreneurs as a unique occupational group – a view which is extended in the proposal of a conceptual model for understanding the stress-coping-strain process in entrepreneurs, as presented in this paper.

4. Consideration of entrepreneurship characteristics in the coping process

4.1. Proactivity

Proactiveness is defined as “an opportunity-seeking, forward-looking perspective characterized by the introduction of new products and services ahead of the competition and acting in anticipation of future demand” (Rauch, Wiklund, Lumpkin, & Frese, 2009, p.763). Characteristics of proactive behaviour sharing similarities with entrepreneurship include: belief in one’s own abilities, sense of personal control, and a take-charge approach. Unsurprisingly, the action-oriented nature of proactivity contributes to its consideration as one of the fundamental characteristics of entrepreneurship (see: Becherer & Maurer, 1999; Bolton & Lane, 2012; Gielnik et al., 2013; Lumpkin & Dess, 1996; McMullen & Shepherd, 2006).

A disposition towards a forward-looking perspective (i.e., proactive behaviour) implies the presence of a future-orientated time perspective (cf. Zimbardo & Boyd, 1999). Such a disposition is likely to influence decisions, action and judgements. For instance, an individual's future orientation has been shown to impact upon mental and physical health and also upon the level of engagement individuals have with the outcome of situations (Aspinwall, 2005). A future-orientation has also been positively linked to socio-economic status, health, and academic achievement (Boyd & Zimbardo, 2005; Zimbardo & Boyd, 1999).

The presence of a future-oriented time perspective may also have implications for stress and strain outcomes and this may be particularly so in an entrepreneurial context. For instance, in Holman and Silver's (2005) three-year longitudinal study of mental and physical health of individuals following the September 11 attacks, it was found that individuals who had a positive future-oriented coping style (i.e., set goals and planned for their futures) showed lower levels of psychological distress. In entrepreneurship, links have been established between increased well-being and proactive behaviour (Hahn, Frese, Binnewies, & Schmitt, 2012), which further suggests that proactivity may play a role in buffering the effects of occupational stress on strain in this group.

4.2. Challenge appraisal

The early years of stress and coping research in entrepreneurship were characterised by scholars drawing attention to the physical and psychological costs associated with business ownership (Boyd & Gumpert, 1983; Buttner, 1992; Kets de Vries, 1985). This research was typically carried out from one of two standpoints: that stress represented a cost to an individual’s health, and that stress may result in economic disadvantage. Research addressing the ways in which entrepreneurs cope with stress is also characterised by the assumption that stressors are threats, and that coping is actioned for the purpose of threat minimisation (Vasumathi et al., 2003). Yet, appraising stressors as threats is only one way in which they may be viewed. As is noted below, stressors may also be perceived as ‘challenges’. When stressors are viewed as challenges, they represent an opportunity for benefit or growth.

Whether a stressor is experienced as positive or negative is based on the individual’s subjective appraisal of the stressor (Lazarus & Folkman, 1984). Given that entrepreneurs are commonly noted for their ability to see opportunities (i.e., challenges) where others may not, it is not unlikely that entrepreneurs appraise stressors as challenges when others view these same stressors as threats.

Whilst there is some evidence in the literature that entrepreneurs prefer to act proactively when dealing with challenges (Akanke, 1992; Boyd & Gumpert, 1983), exploration of these findings has gone largely unexplored in stress and coping research in entrepreneurship. The conceptual model presented below aims to address this imbalance, and accounts for the role of proactivity and stressor appraisal in understanding the stress-coping-strain process in this context.

5. Current conceptualisations of the stress-coping-strain process: limitations and future opportunities

Due to the infancy of psychological stress research within the domain of entrepreneurship, it has not yet been established whether existing theories of stress and coping are a good fit for this occupational group in their current form (Wincent & Örtqvist, 2009). A significant limitation of previous work is its insufficient attention to the conceptual basis of coping in entrepreneurs; specifically, whether recognised coping typologies, as described in seminal work in the stress and coping literature (see: Carver & Connor-Smith, 2010) capture the dimensions of coping that are important for adaptive outcomes among entrepreneurs. A related limitation, as outlined above, is the lack of attention to the role of entrepreneurial characteristics (e.g., proactivity and opportunity recognition) in the stress-coping-strain process. Despite these limitations, existing theories (of stress and coping) and their associated measures continue to be used to determine an entrepreneur's level of stress and also to inform recommendations for stress management interventions. Two approaches currently taken in the literature are outlined below.

5.1. A traditional approach

Perhaps the most influential model of stress is the Transactional Model of Stress and Coping (hereafter referred to as the 'Transactional Model'), which was proposed by Lazarus and Folkman (1984). This model defines stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984, p.19). Within this model, coping is theorised to be carried out in response to an identified stressor being appraised as either a threat, harm or challenge. Coping is viewed as a dynamic process that can be defined as the efforts of an individual to manage demands (Folkman & Lazarus, 1980; Folkman & Lazarus, 1985; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Coping may also be considered as a way of reducing stress and strain (Shinn et al., 1984).

The Transactional Model can be considered as a 'situational' approach in that coping strategies are enacted in reference to the *past* (i.e., selected based on the efficacy of previous coping strategies) and the *present* (i.e., in response to the identification of actual stressors), yet the *future* – such as the future-orientation commonly observed in entrepreneurs (Greenglass & Fiksenbaum, 2009) which may influence coping responses – is not considered in this approach.

5.2. A future-oriented approach

More recently, researchers have begun to pay greater attention to the influence of a future-oriented time perspective on coping efficacy (see: Gan, Yang, Zhou, & Zhang, 2007; Schwarzer & Knoll, 2003; Schwarzer & Taubert, 2002). These studies highlight the role of a future-orientation in enhancing engagement (the antithesis of the strain outcome 'burnout'), and offer insight as to the role of future-oriented perspectives in reducing strain through reduction (or elimination) of potential stressors. Given these developments in coping research and also because future-oriented personality and behavioural traits are commonly attributed to those engaged in entrepreneurial pursuits (Greenglass & Fiksenbaum, 2009), it appears

warranting to examine future-oriented conceptualisations of coping in an entrepreneurship context.

Coping as a proactive strategy is a relatively recent development in the history of the coping literature, and has risen as an area of positive psychology (Seligman & Csikszentmihalyi, 2000). One such conceptualisation is Future Oriented Coping (FOC), which views coping as a proactive method of risk and goal management. According to FOC theory, coping is a composite of 'typical coping' (i.e., activities are carried out in response to a threat or harm-loss, in accordance with the Transactional Model) and 'self-regulatory activities', which are "the processes through which people control, direct, and correct their own actions as they move toward or away from various goals" (Aspinwall, 2005, p.9).

When viewed through a FOC lens, coping can be enacted before a stressor is encountered in order to alleviate the distress felt or to eliminate the stressor altogether. In accordance with COR theory (cf. Hobfoll, 1989), in the face of loss individuals are said to 'take stock' of their resources and act in a proactive manner in order to gain new resources to offset potential future losses. FOC takes the approach that resource accumulation is an 'insurance policy' against potential (or future) stressors and is also a way of facilitating the achievement of goals. As such, the greater and more developed an individual's inventory of resources, the more likely one is to cope effectively with stress.

FOC refers to a single construct comprising two future-directed coping sub-constructs (Gan et al., 2007). It is important to note that in the academic community, competition exists to claim ownership of the term 'proactive coping', with two conceptualisations of the term continuing to be used concurrently throughout the literature; one definition is provided by Aspinwall and Taylor (1997) and the other by Schwarzer and Taubert (2002). For the purpose of this paper, and in keeping with the approach taken by Greenglass (2002), Aspinwall and Taylor's definition of proactive coping will be termed 'preventative coping', while Schwarzer and Taubert's definition will continue to be termed 'proactive coping'.

5.2.1. Preventative coping

Preventative coping (cf. Aspinwall & Taylor, 1997) is defined as "effort to build up general resistance resources that reduce the severity of the consequences of stress, should it occur, and lessen the likelihood of the onset of stressful events in the first place" (Greenglass, 2002, p.6). According to this definition, potential stressors are classified as a 'threat' or 'harm-loss' (note the absence of stress classified as a 'challenge').

5.2.2. Proactive coping

Proactive coping (cf. Schwarzer & Taubert, 2002) is defined as a self-regulatory, positively-oriented method of goal attainment (Greenglass, 2002; Sohl & Moyer, 2009) and is defined as "effort to build up general resources that facilitate promotion toward challenging goals and personal growth" (Schwarzer & Taubert, 2002, p.9). Individuals who utilise proactive coping use mental simulation in a visionary manner to view risks, demands and opportunities as 'challenges', rather than as a threat, harm or loss. In this sense all stress is seen as positive (i.e., eustress).

5.2.3. Differentiating preventative and proactive coping

There are two main differences between proactive coping and preventative coping: motivations and worry levels of the individual (Schwarzer & Taubert, 2002). In reference to motivations, Schwarzer and Taubert (2002) claim that preventative coping is characterised by evaluating potential stressors as harmful, whereas with proactive coping the individual assesses potential stressors as challenges. According to FOC theory (Greenglass, 2002), when

an individual appraises a stressor as a threat they will use 'preventative coping'; when the stressor is appraised as a challenge, they will use 'proactive coping'. With respect to worry, Schwarzer and Taubert posit that preventative coping is associated with higher levels of worry, perhaps in response to the perception of impending harm, whereas those coping proactively would worry less (as a positive outcome is unlikely to induce worry).

The use of FOC strategies has been shown to positively influence health outcomes. For example, preventative coping was shown to mediate the relationship between stress and strain in student populations (Gan et al., 2007), and proactive coping strategies have been shown to predict lower depression (Uskul & Greenglass, 2005).

5.3. Coping: a buffer to the negative effects of stress on strain

Appraising stressors as positive (i.e., as challenges) is entwined with positive health outcomes (Frydenberg, 2014) and is shown to be predictive of well-being (as compared to when stressors are appraised negatively) (Greenglass, 2002). Given that proactive coping strategy use is informed by positive appraisal and that preventative coping strategy use is informed by negative appraisal, it is not unreasonable to expect proactive strategies to buffer the effects of stress on strain to a greater degree than preventative strategies. The use of either strategy (i.e., preventative or proactive) is expected to result in lower strain outcomes than the use of present-oriented/situational-based strategies due to FOC's aim of eliminating or reducing potential stressors before they occur (as discussed earlier).

5.4. Relevance of existing theories in the domain of entrepreneurship

While entrepreneurship has historically benefited from the transference of theories from other disciplines to its own, this is often done without consideration of the non-uniformity between occupational groups (Zahra & Wright, 2011). The differences between entrepreneurs and employees, as noted above, suggest that although there may be a potential application of existing stress research to entrepreneurs, we should be wary of generalisations between populations (Cardon & Patel, 2013). Using past research from the occupational stress literature to understand coping responses in entrepreneurs is not straightforward given the complex nature of stress in this group (Kariv, 2008). While academic literature relating to stress in management roles may provide a general framework on which to build (Kariv, 2008), given the differences between occupational groups, it is not expected to tell the full story of stress and coping among entrepreneurs.

6. A conceptual model of the stress-coping strain process in entrepreneurs

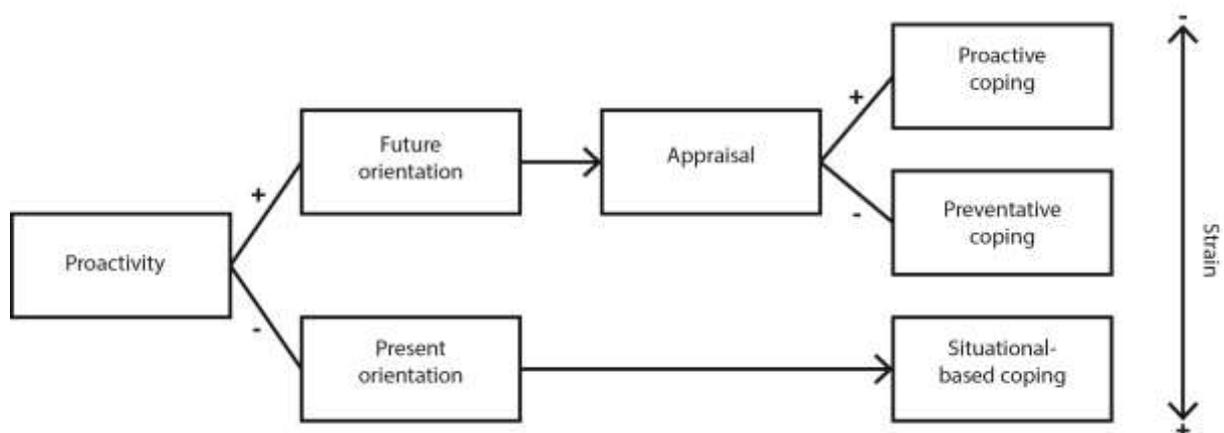


Figure 1: Conceptual model of the stress-coping-strain process in entrepreneurs

The proposed model of the stress-coping-strain process in entrepreneurs is depicted in Figure 1. Elements within this model are drawn from existing literature as discussed above. According to the model:

- Entrepreneurs with a future-oriented time perspective who appraise stressors positively (i.e., use proactive coping strategies) are predicted to experience low levels of strain.
- Entrepreneurs with a future-oriented time perspective who appraise stressors negatively (i.e., use preventative coping strategies) are predicted to experience greater strain outcomes than those using proactive coping strategies, yet less strain than those using situational-based coping strategies.
- Entrepreneurs with a present-oriented time perspective (i.e., exhibit low levels of proactivity comparative to other entrepreneurs) are predicted to favour situational-based coping strategies and are expected to experience higher levels of strain than those using proactive or preventative coping strategies.

7. Discussion and conclusion

Prior research has established that stress is an inherent accompaniment to the entrepreneurship experience. Yet, understanding of the ways in which entrepreneurs cope with stress remains largely unexplored. Accordingly, empirical research upon which to base recommendations for stress-management interventions is lacking. Without clarification as to how entrepreneurs cope with stress, future research is expected to be limited (and perhaps misled) in its ability to understand how entrepreneurs experience stress, and as such the validity of reported findings may suffer.

Stress and coping research in entrepreneurship has drawn from traditional conceptualisations of stress and coping constructs in order to inform study design, yet, these appear limited in their ability to consider fundamental characteristics involved in the entrepreneurship process (e.g., proactivity and an orientation towards the future). As it is possible to expect proactive individuals to engage in entrepreneurial activity to a greater degree than those not possessing this characteristic (Becherer & Maurer, 1999), so too is it plausible to expect that entrepreneurs may engage in proactive coping behaviours to a greater degree than non-entrepreneurs. As noted above, such behaviours are largely unaccounted for in traditional stress and coping models. By contrast, the conceptual model presented here acknowledges that characteristics that have been associated with successful business/entrepreneurial performance may also have implications for stress resistance among entrepreneurs by virtue of their effect on coping responses.

As outlined above, research has indicated that positive health effects may be gained from proactive behaviours. Given this, it is foreseeable that the ways in which (some) entrepreneurs cope with stress may provide an advantage in terms of stress resilience. In other words, that 'being entrepreneurial' may in itself act as a buffer to stress on strain, and that the greater one's disposition towards entrepreneurial behaviours the greater one's ability to cope with stress. By first establishing what strategies entrepreneurs use (and how – proactively or situationally), we may start to investigate whether different strategies make a difference for particular stressors, and for those with varying dispositional styles. Therefore, a practical implication of this paper is that adoption of a more nuanced approach to the

investigation of coping in entrepreneurship may result in a better understanding of the stress-coping-strain process and therefore may lead to improved health outcomes and increased performance (of both entrepreneurs and their ventures) through initiatives such as stress education and coping skills training. The recommendation from this paper is that an essential element to assess when examining coping responses among entrepreneurs is the extent to which these coping responses are future-oriented versus situationally-based. There is then a further distinction between proactive and preventative FOC coping that is retained from that literature. Coping strategy functions from the situationally-based coping literature are also retained but in measuring these coping strategies, we recommend that the time-orientation of the strategies is also considered.

In summary, the model presented here suggests that strain outcomes in entrepreneurs are determined by the use of proactive, preventative and/or situational based coping strategies (the use of which is informed by an entrepreneur's time orientation and the way in which entrepreneurs appraise stressors).

7.1. Future research

Given that delineation of the nature of coping responses in entrepreneurs has not yet been forthcoming, and the strategies that buffer the effect of stressor exposure on strain outcomes have not been identified, the scope of future stress and coping research in entrepreneurship is considerable. Studies are needed to identify the functional and dysfunctional coping strategies that impact entrepreneurs and their ventures so that stress management programs can then be tailored to reduce the long term problems stress represents for ventures and the individuals who operate them (Grant, 2011). Noting the considerable costs of stress to entrepreneurs, their ventures, and society, further research is warranted in order to clarify adaptive coping in an entrepreneurial context.

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Entrepreneurs' Perceptions of Challenges for Growing Their Micro-Firms

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Entrepreneurs' Perceptions of Challenges for Growing Their Micro-Firms

Abstract

Despite the fact that about 90% of all companies are micro-firms, they have received very little explicit attention in business growth research. To explore this understudied issue, we analyze the challenges which entrepreneurs perceive for growing their micro-firms. Based on interviews with 30 entrepreneurs whose firms employ less than 10 employees, we identify patterns in perceptions across entrepreneurs. The challenge most often perceived to hamper growth is the scarcity of time, which hints at the lack of prioritization of growth issues in micro-firms. Further challenges differ between sectors, whether the firm is linked to a business incubator or not, and between different age groups of firms. We encourage entrepreneurs running micro-firms to thoroughly analyze their prioritization and to use time management and priority-setting strategies in order to actively develop and grow their companies.

Introduction

Small businesses, including micro-firms, are the backbone of many economies worldwide, and their growth is of great importance for job creation and economic welfare (e.g. EIM Business & Policy Research, 2009). In the US, an astonishing 87.95% of all businesses are micro-enterprises (as of 2008; Association for Enterprise Opportunity, 2010). Over 99% of all enterprises in Europe are small and medium-sized enterprises (SMEs), and 90% of them fall into the category of micro-firms. According to the European Commission (2010/11) a micro-firm is “...an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EURO 2 million”. These micro-firms account for 53% of all jobs in Europe, demonstrating their importance for employment as well as social and economic welfare (Doern, 2009; Bushfeld et al., 2011). Yet, many micro-firms fail or never embark on a growth path. One obvious explanation to this is that many start-ups enter mature industries with non-unique business ideas and/or only serve local markets, resulting in a low growth potential (Davidsson et al., 2010). However, it might also be the case that entrepreneurs running a micro-firm are unable to unleash its existing growth potential, as they perceive a number of challenges which they have difficulties to overcome. This paper aims at exploring whether and how entrepreneurs perceive challenges for growing their micro-firms.

Empirical research explicitly investigating the challenges for growth of micro-firms is scarce (Heshmati, 2001), but a huge number of studies on the growth of somewhat larger firms have been published in the last decades (for an overview see Davidsson et al., 2010). According to Reid (1995: 89), the “reason why the micro-firm is neglected is quite simple: data are not readily available”. When the focus of growth studies is on the entrepreneur, their growth intentions are usually used as a proxy measure (e.g. Delmar & Wiklund, 2003; Mok & van den Tillaart, 1990; Wiklund, 2001; Wiklund & Shepherd, 2003). Existing studies of SME growth, typically in a retrospective design, tend to investigate the impact of one or several internal and/or external factors on business growth. Factors most commonly operationalized are increase in sales, numbers of employees, assets and/or profit (e.g. Weinzimmer et al. 1998; Delmar, 1997). This *increase in amount* is the dominating connotation of growth (Penrose, 1959:1). Penrose, however, suggests a second connotation of growth, which refers to growth as an increase in size or improvement of quality as a consequence of a *process of development* (ibid). The bias towards the outcome of growth has been shown to fail to capture aspects of growth which are perceived as relevant both by practitioners (Achtenhagen et al., 2010) and by the research community (Leitch et al., 2010). The purpose of this paper is to

identify and explore challenges for micro-firm growth as perceived by entrepreneurs. Thereby, this paper not only aims at building relevant theory, but also to derive practical implications, which could help entrepreneurs to manage hurdles impeding the growth of their micro-firm (cf. Persson, 2011a).

The remainder of this paper is structured as follows. After a review of relevant literature on challenges for growth in micro-firms, we present our method. We then proceed in briefly describing the country context of this study, before presenting and discussing our findings. The paper is concluded by practical implications as well as a discussion of limitations and suggestions for further research.

Literature review: Challenges for growth in micro-firms^{30, 31}

Kelliher and Reindl (2009) argue that micro-firms are fundamentally different from other firms as they, i.e., tend to be more conservative, use non-formalized methods for business development, apply direct supervision and a one-person centered organizational structure. In line with this, it is argued that the development of the firm often relies on the manager's (who typically also is the owner) intuition (Lieberman-Yaconi et al., 2010). This emphasis on the entrepreneur is common in micro-firm research, where entrepreneur and firm are treated as the same entity (Davidsson et al., 2010).

In one of the rare empirical studies specifically focusing on company-related challenges for micro-firm growth, the focus is on how the owner-managers' self-identity influences the type of management practices adopted by the firm (Parry, 2010). The founders' self-identity is especially important in micro-firms, as there is a lack of specific systems and routines (Parry, 2007). In addition, it has been argued that the founders' perceptions on the consequences of growth affect their willingness to grow (Doern, 2009). The negative outcomes that often are anticipated by entrepreneurs include higher tax loads, more responsibilities for employees' well-being and/or a required change in the micro-firms culture (cf. Ylinenpää, 1996).

A lack of skill-based resources for managing growth, such as skilled labor or managerial skills and capacity as to how to develop the organization and allocate the scarce resources available, has been noted before (Penrose, 1959). The theoretical argument is that in expansion, the existing managerial skills are tied up in daily operations, hampering the necessary development of new managerial services, skills, and organizational efficiency and structures to capture value from further growth opportunities. Indeed, it is sometimes argued that this "Catch 22³²" related problem of managerial development is a bigger challenge for micro-firms than the obtaining of financial resources - often reported as the dominating challenge for start-ups (e.g. Bohatá & Mládek, 1999; van Auken, 2004).³³

In addition, risk and uncertainty have been pointed out as a challenge to business growth (e.g. Penrose, 1959). While uncertainty and risk should be seen as natural parts of a business, excessive uncertainty hinders a firm's capability to prospect or calculate future outcomes,

³⁰ As research on micro-firms is limited (Heshmati, 2001), we also refer to selected research on small and medium-sized firms where necessary.

³¹ As noted above micro-firms are defined as "...an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EURO 2 million" (European Commission, 2007)

³² 'Catch 22' is a novel by Joseph Heller, in which problematic situations, for which the only solutions are denied by circumstances of the problem itself, are important for the story-line.

³³ Though, for example, Reid (1996) finds that only a minority of firms in their sample had experienced a shortage in funding.

often leading to a delay of important decisions, and thus affecting performance (Fisher, 2010). Another challenge for growth appears with the difficulty to conduct business in an environment where the entrepreneur leading the micro-firm is not (yet) aware of the rules (Bernanke, 1983). Then, entrepreneurs might perceive difficulties to develop a strategy, putting their decisions or operations on hold until the ‘mist’ disappears and rules appear as more evident (Fisher, 2010).

Turning to more macro-related challenges, Ylinenpää (1996) points at unfavorable institutional systems regarding taxes and employment. Further challenges refer to the general demand for the firm’s product and services, production factors and the business environment (Kangasharju, 2000). It has also been suggested that the relevance of challenges differs between industries, for example when it comes to access to capital, tax levels or exchange rates (Orser, Hogarth-Scott and Riding, 2000).

Method

In line with recent calls for more, and especially qualitative, research on growth and its underlying processes (Doern, 2009; Davidsson et al., 2010), a qualitative method was chosen for the purpose of this study. The data were generated through semi-structured, open-ended interviews with 30 entrepreneurs running micro-firms. The sample is consistent with the European Commission’s definition of micro-firms regarding number of employees and turnover.

Sampling for this study was conducted in cooperation with a regional incubator. Firstly, the authors received a contact list of approximately 100 firms, which was assumed to contain many micro-firms. A review of this list showed that 58 firms met the definition of micro-firms; these were contacted and a total of 18 firms located in the incubator agreed to participate in the study. Using snowball technique (Saunders, Lewis & Thornhill, 2003) we extended the sample with 12 more micro-firms, located outside the incubator. The total sample size of 30 micro-firms thus meets the suggested cut-off point for heterogeneous samples in qualitative studies (DePaulo, 2000).

All interviews were conducted in spring 2011. The interviews lasted between 30 minutes and 2 hours. All interviews were tape-recorded and transcribed. The transcript from each interview was sent to the respective interview partner for respondent validation and approval (cf. Silverman, 2001).

The aim was to identify and explore perceived challenges related to growth. Following Doern’s (2009) discussion of the importance of language expressions when investigating growth aspects we chose to divide the interview into two parts, and to use the ‘neutral’ concepts of “general challenges” and “challenges for growth” to avoid the biased connotations that can emerge from more directed interview situations, including the use of concepts such as “barriers” or “constraints” (Barth, 2004; Pissarides et al., 2003). Consequently, the interview partners were *not* informed that this was a study on business growth, but rather that we were interested in micro-firms more generally.

The interviews followed an interview pro-forma and consisted of three parts: the entrepreneurs and company’s background (including the entrepreneur’s growth aspiration, cf. Wiklund et al., 2003), secondly perceived general challenges, and thirdly perceived challenges for growth. In this way we could analyze data from two somewhat separate discussions on perceived challenges.

Two of the authors independently analyzed the tapes and then we wrote vignettes for all 30 firms. Following the within-case analyses, these vignettes were then compared for a cross-case analysis in order to make sure that all relevant information was included. As the analyses proceeded, the ongoing construction of working hypotheses led to a highly iterative process, including several re-analyses of the original tapes.

In order to search for patterns of perceived challenges in a structured way, we employed an analysis inspired by Ragin (1987). This analysis combines the intensity of information gathered through case-study research with the additional advantage of examining larger number of cases (Ragin & Zaret, 1983). Three main differentiating variables were identified. These were the age of the firm (less than 2 years, 3-7 years or more than 7 years old), the location of the firm (within incubator or not) and the sector the firm operated in (service or manufacturing). Further, we compared the perceived challenges identified during the discussions of general challenges and the discussions of challenges explicitly related to growth.

Despite the number of cases, we do not suggest generalizability of the results in a statistical sense. Rather, the aim with this explorative study is to achieve analytical generalizability of a set of results to contribute to the existing literature on business growth in general, and micro-firm growth in particular (cf. Yin, 1989: 43-33).

The institutional context

This study was conducted in Sweden, and some specificities of this institutional context need to be pointed out. Sweden reported the fastest quarterly economic growth in Europe in the beginning of 2011, reinforcing its position of being one of the best-performing economies in Europe (Ward, 2011). In previous decades, the major part of growth, employment and social welfare in Sweden was created by large companies (Persson, 2011b). Critics state that institutions in Sweden since WWII systematically have hampered growth of independent businesses, for example by taxation, wage-setting institutions and labor market legislation (Davidsson and Henreksson, 2002; Carlsson, 2002). Also the lack of qualified labor has been identified as a threat to the future growth of SMEs in Sweden (Jansson, 2011). This situation is aggravated by the historical trajectory of skilled labor to favor secure jobs (Barth, 2004). But from the 1980s and onwards there has been a change in the size-distribution of companies in Sweden, and the amount of SMEs has increased dramatically (ITPS, 2007). Today 94.5% of SMEs in Sweden are micro-firms. Micro-firms represent 21.6% of the value added and 29.8% of all employees in Sweden (European Commission, 2010/11).

A main challenge for the economic development in Sweden is the lack of growth of this increasing group of micro-firms. In a recent analysis of the growth of companies within Swedish industry, Statistics Sweden (2010) found that the majority of micro-firms founded in 2004 and still operating in 2008 had remained micro-firms; and only 3 percent had grown into SMEs.

Findings

Sample characteristics

Before presenting our findings regarding the challenges perceived by micro-firms, we will describe the sample characteristics (see Appendix 1). All but one of the entrepreneurs in our sample had completed at least two years of university-level education before they founded their firm. In addition, the majority of the managers have extensive experience within the field they are operating in, and most of the venture ideas are related to their field of expertise. Both of these factors may affect the challenges perceived (cf. Storey, 1994), and they provide

some indication that our sample might be biased towards the type of micro-firms for which business growth is a relevant topic.

Growth intentions do not vary greatly across the sample. Out of the 30 micro-firms, only two entrepreneurs stated that they had no ambition to grow, both operating in the service industry. The lack of ambition in these two firms is their most important challenge for growth (see also Barth, 2004; Storey, 1994). That many of the other entrepreneurs report growth intention (as well as achieved some growth) can at least partly be explained with the fact that the business incubator selects its tenants based on growth aspiration. The focus of the remaining analysis will be focused on the 28 micro-firms run by entrepreneurs who have the intention to grow their businesses.

Overall results

Based on the interview data, we identified and coded 22 different challenges, which the 28 entrepreneurs in total mentioned 90 times. Of these, 51 challenges were mentioned as general challenges and 39 were mentioned as growth-related challenges. Interestingly, 12 of the 22 challenges were mentioned in both of these categories, confirming that growth is an important theme for some micro-firms. The number of challenges reported in the interviews was in average 3.3 (for both types of challenges). Only a few entrepreneurs reported five challenges or more, and all entrepreneurs perceived at least two challenges.

The general challenges perceived as most relevant were marketing, lack of time, qualified labor, and the inadequate organizational structure (see Table 1 below). Together these four challenges represented 45% of all general challenges mentioned. As specific challenges for growth, the lack of time, regulations, and competition were most frequently mentioned (representing 54% of all challenges for growth discussed).

Table 1. General challenges and challenges for growth³⁴

General challenges	Challenges for growth
Marketing (7)	Lack of time (8)
Lack of time (6)	Regulations (7)
Access to qualified labor (5)	Competition (6)
Inadequate organizational structure (5)	Access to qualified labor (4)
Access to capital (4)	Geographical location (3)
Competition (4)	Risk of hiring new employees (3)
Other challenges (20)	Other challenges (8)

In the following the most important challenges are presented one by one below to explore more fully how they are perceived by the micro-firms' entrepreneurs.

Perceived lack of time

Lack of time is the overall most commonly mentioned challenge (mentioned a total of 14 times in both categories). This corresponds to Persson's (2011a) assumption that the feeling of 'not having enough hours per day' would hinder small firms in Sweden to take growth-related actions. The perceived lack of time typically reflects a lack of resources, most

³⁴ Only challenges which were mentioned by at least three different micro-firms are listed. 'Other challenges' sums up those challenges mentioned by one or two companies. The number in brackets refers to the number of micro-firms that reported this specific challenge.

pressingly managerial capacity, within the firm. Here, a ‘Catch 22’ situation sets in, as illustrated by one of the entrepreneurs³⁵:

“However to be able to increase the existing resources within my firm, I would need to find time to take appropriate action” (Interview, entrepreneur 5).

The situation is perceived as frustrating, as it is challenging to create new managerial skills and/or improve efficiency and organizational structures at the same time. A simple solution would be to hire more people or to train existing management/employees. But several founders state that they find recruitment processes too time-consuming, and as a consequence they rather increase the workload of their existing employees (and, consequently of themselves). Similarly, entrepreneurs state that they wish to expand their existing knowledge-base through training, but again do not have the time to invest in such educational activities.

Competition

Competition is perceived as both, a general challenge and a challenge for growth (mentioned 10 times during the interviews). The motivations provided by the entrepreneurs were similar in both discussions (on general challenges and on growth). Several of the entrepreneurs expressed a concern about effects of the recession as well as larger players’ market power, for example:

“The recession has put even more strain on our market and makes it even more difficult for us as small firm to compete with larger competitors.” (Interview, entrepreneur 22)

How to respond to competition, as well as to the business environment more generally, is perceived as an important challenge, supporting previous research findings (e.g. Kangasharju, 2000). The feeling of a lack of control of the business environment is central to this challenge, as this sense of uncertainty hampers the micro-firm’s ability to predict possible outcome scenarios (e.g. Fisher, 2010).

In addition to facing the competition by larger players, a number of entrepreneurs expressed their fear about the appropriation of their business idea by a competitor, for example:

“And as our product is unique, an imitation of our product by a competitor could be detrimental for the future growth of the firm.” (Interview, entrepreneur 22)

“I am very much afraid that a larger firm could steal our idea” (Interview, entrepreneur 30)

While this issue was classified as related to competition in the analyses it can also be classified as a lack of (knowledge about possible) intellectual property protection, which might be tightly related to the perceived lack of time discussed above – i.e., due to limited time availability, entrepreneurs might not be fully aware of the need and possibilities of intellectual property protection, such as patents or trademarks.

³⁵ In the following text, quotes from the entrepreneurs are used. They can be traced back to the (anonymized) companies in table 1, i.e. ‘entrepreneur 5’ corresponds to ‘company 5’ in that table.

Access to qualified labor

Access to qualified labor was the third most frequently mentioned general challenge, and ranked number four as the most recurrent challenge for growth (mentioned a total of 9 times). Already Penrose (1959) identified a lack of skill-based resources as an obstacle to growth, which in this study was confirmed to hold true even more than 50 years later. However, several entrepreneurs mention that this challenge does not necessarily imply that there would be a lack of skills on the market:

“Our problem is rather to identify people that match the qualifications we need and the attitudes we desire. Right now, it would be more important to us to recruit an additional owner, rather than a new employee. Obviously it is vital for us to find an owner who brings value to the firm, but who also understands the culture.” (Interview, entrepreneur 9)

Again, this challenge is connected to the perceived lack of time. Five entrepreneurs reported the dilemma that they would have to recruit employees to develop their firm, but at the same time found it too time-consuming to identify, recruit and train the ‘right’ people.

Marketing

Another frequently perceived general challenge, and especially by entrepreneurs active in the service industry, is marketing (mentioned by 7 out of 30 entrepreneurs). More specifically, the difficulty to reach the target group is put in focus.

“Our firm must find new ways to reach potential customers, but we do not know how to do that.” (Interview, entrepreneur 16)

This challenge of marketing activities has not received much attention in existing studies on SMEs, even though Colucci and Presutti (2006) present convincing arguments for the importance of customer relationships for small-firm growth. According to Carson (1985), successful marketing depends on having a specialist in the field employed, which evidently most micro-firms do not have. Thus, in line with the discussion above that a lack of certain skills could hamper development and growth, it appears evident that micro-firms’ growth can suffer from a lack of knowledge in the area of marketing. Interestingly, the entrepreneurs in our sample name marketing only as a general challenge, but not as a challenge for growth. In addition, marketing is considered less of a challenge by the entrepreneurs running manufacturing firms, while those of service firms report the challenge of identifying and reaching potential customers. The entrepreneurs of manufacturing firms rather discuss the importance of gaining industry acceptance, especially when their products are innovative and unique. While they typically find target customers easy to identify and approach, it is perceived as more difficult to convince them to actually buy the product.

Inadequate organizational structure

Five entrepreneurs assess that they should change the structure of their organization to better prepare the company for future development, but perceive as a general challenge not to have the capacity at this point. Such lack of managerial capacity as limit to business growth is well-established in existing literature on SMEs (e.g. Penrose, 1959; Ylinenpää, 1996), and our findings suggest that this is true even for micro-firms. One underlying reason stated by several entrepreneurs in our study is that their micro-firm has grown faster than intended by their business plan or vision. The resulting organizational structure is then perceived as a

general challenge for the micro-firm. Several entrepreneurs perceive that better designed structures and routines as well as more planning should improve their time-efficiency.

“We can clearly identify opportunities for further development, but our organizational structure causes inefficiencies, which lead to a lack of managerial time, and therefore we are not able to take advantage of these opportunities.” (Interview, entrepreneur 20)

However, further feeding into the Catch 22 situation outlined above, at the same time the micro-firms, somewhat paradoxically, claim that they do not find the time to implement such changes.

Regulations

When discussing challenges for growth, *regulations* are mentioned by seven entrepreneurs, mainly from service industries (and just one manufacturing firm). This challenge appears especially relevant in relation to the hiring of employees. According to labor regulations in Sweden, micro-firms must pay for the two first weeks of a sick-leave. This implies a high financial risk for the micro-firm, as argued by several of the entrepreneurs. In effect, micro-firms refrain from hiring additional personnel, reinforcing the perceived lack of time as a challenge for growth (cf. Bernanke, 1983). That Swedish regulations hamper business growth has been suggested in previous studies (e.g. Carlsson, 2002; Davidsson & Henreksson, 2002). In this study it can be added that the entrepreneurs regard the very complexity of the system as challenging. Regulations are complicated to understand and time-consuming to address, deviating attention from the business activities of the firm:

“The regulations are too complex as well as time-consuming, and hard to understand. In result, instead of focusing on the actual aim of the firm, such as selling our product, we have to focus on administrative tasks, unfavorable taxation processes and complex, institutional employment routines.” (Interview, entrepreneur 18)

From our data it is difficult to interpret whether it is the regulations *per se* that are perceived as a challenge to growth or whether it is the entrepreneurs' insecurity related to this complex system that hampers growth. This question deserves further enquiries to facilitate the development of policy measures supporting micro-firm growth.

Geographical location

Three of the entrepreneurs state their *geographic location* to be a challenge for growth. Previous research on small firm growth had suggested that geographic expansion can limit growth, when new subsidiaries have to be established in a different geographic location (e.g. Barringer & Greening, 1998). In our study, however, micro-firm entrepreneurs rather discussed geographic distance as a challenge for growth, namely when the customers are spread all over Sweden (and abroad) and it is difficult for the micro-firms to cover such a large geographic area. Also, this challenge again is related to the perceived lack of time, which entrepreneurs find for travelling to the customers, especially when growing and thereby increasing the customer-base.

“One challenge for growth for us clearly is our geographic location, as we are very far away from many of our customers. (Interview, entrepreneur 13)

Risk of hiring new employees

The risk of *hiring new employees*, mentioned by three micro-firm entrepreneurs as a challenge for growth, is clearly linked to the timing of the decision.

“As a micro-firm, you increase your costs considerably by hiring a person. The timing of the decision is therefore vital. In addition, it takes courage to actually take the step to take on the responsibility as employer.” (Interview, entrepreneur 1)

This adds an additional aspect to the challenge of hiring new employees, which above had been pointed out to be related to the process of identifying and selecting the right people.

Access to capital

Existing literature on business growth has stressed the *lack of capital* as a main reason for why small firms would refrain from employing additional personnel. Especially in information and communication technology firms as well as other high-tech firms this has been found to be a major obstacle to growth (Orser *et al.*, 2000). In our study, four micro-firm entrepreneurs perceived access to capital as a general challenge, for example:

“Overall, the access to capital is a continuous challenge, and the incoming flow of capital seems stagnant, hindering new ideas to be explored in a fast manner.” (Interview, entrepreneur 7).

However, while earlier studies often refer to access to financing as a challenge, in our study the discussions circled mainly around the availability of cash flow to keep the business running, for example if customers pay their invoices too late.

Patterns in perceived challenges

Overall, the discussion of general challenges turned out to be more related to the operational daily-life of the firm, reflecting the journey of the company so far as well as current pressing issues, while the discussion of challenges for growth typically took a more forward-looking, future-oriented turn. When analyzing the perceived challenges in more detail, three patterns emerged, which will be discussed in the following.

Challenges and the sector effect

Perceived challenges differ between service and manufacturing firms (see table 2 below). Of the 28 micro-firms with growth ambitions, 17 are operating in the service industry and 11 within the manufacturing industry.

Table 2. The sector effect³⁶

	Service industry	Manufacturing industry
General challenges	Marketing (7) Competition (3) Qualified Labor (3) Access to capital (3) Inadequate organizational structure (3)	Time (5)
Challenges for growth	Regulations (6) Qualified Labor (4) Time (3) Competition (3)	Time (5) Competition (3)

The most frequently mentioned general challenge by manufacturing micro-firm entrepreneurs is the perceived lack of time, implying that they believe that there is not enough time to focus on selling since they are so involved in administrative tasks. To cope with their workload, entrepreneurs state that they work overtime, including late nights and weekends. The pattern remains when the challenges were more explicitly related to the discussion of growth. Time is still perceived as the main challenge.

The main general challenge reported by service firm entrepreneurs is marketing, and the main challenge related to growth refers to regulations (both of which were of little relevance to the manufacturing firms, see table 2 above).

Challenges and the business incubator effect

Some differences were found in the perceptions of general challenges and challenges for growth between the 17 micro-firms located in a business incubator and the 11 micro-firms not linked to an incubator (see table 3 below).

Table 3. The business incubator effect³⁷

	Located in business incubator	Not in business incubator
General challenges	Marketing (6) Qualified labor (4) Inadequate organizational structure (4) Lack of time (3) Access to capital (3)	Lack of time (3)
Challenges for growth	Lack of time (5) Geographical location (3) Risk of hiring new employees (3)	Regulations (5) Competition (4) Lack of time (3) Qualified labor (3)

The first difference is the number of challenges perceived. The incubator companies reported on average one challenge more than the non-incubator companies, which might indicate that incubator companies tend to reflect more on their business development and growth.

One main difference regarding which challenges micro-firm entrepreneurs perceived as important refers to regulations. This was perceived more frequently as a challenge by non-

³⁶ Only those challenges mentioned by more than 3 micro-firms are reported.

³⁷ Only challenges mentioned by more than three micro-firms reported

incubator entrepreneurs than by those of firms located in the incubator. Here, the business support available in the incubator appears to make a difference. Micro-firms located in the incubator are assigned a business developer who supports the firm in regulatory and taxation issues. This is in line with previous studies which show that tenants of business incubators have access to business support and better network access (e.g. Ratinho, Harms and Groen, 2010). Marketing was on the other hand considered much more of a challenge by entrepreneurs of firms inside the incubator. As many of the micro-firms are built around business models that draw on the entrepreneurs' experience, one explanation of this difference could be that entrepreneurs outside of the incubator rely more on their personal contacts when marketing. Also, it might imply that the support available from the incubator for developing marketing activities is less advanced than for regulatory issues.

Challenges and the age effect

Somewhat surprisingly, previous research has hardly differentiated challenges in relation to the age of the micro-firm, though it could be expected that challenges of younger micro-firms might be different from those that have been around for a longer period of time. Somewhat older firms might, for example, achieve more stable performance, though they have not (yet) embarked on a growth trajectory.

Table 4. The effect of age³⁸

	Age of firm		
	>2 years	2 to 7 years	7< years
General challenges	Lack of time (5) Qualified labor (3)	Marketing (5)	(No challenge mentioned by 3 or more firms)
Challenges for growth	Lack of time (4) Qualified labor (4) Regulations (3)	Competition (5) Lack of time (3) Regulations (3) Geographical location (3) Risk of hiring employees (3)	(No challenge mentioned by 3 or more firms)

Indeed, our study illustrates that in the micro-firms that were two years or younger (12 firms), a lack of time was perceived to be the biggest challenge (see table 4 above). In micro-firms in operation between two and seven years (13 firms), marketing was perceived as major general challenge, and competition was the most frequently perceived challenge for growth. Interestingly, in this group of companies, the lack of time is perceived as less of a challenge than for newly started firms, implying that micro-firms over time develop routines and processes to cope with the time-pressure perceived at the very early stages. For the three micro-firms in our sample that were in operation for more than seven years, no clear pattern in perceived challenges could be identified, though the availability of capital plays an important role for two of the firms.

Conclusions

The purpose of this study was to identify and explore challenges perceived by entrepreneurs running micro-firms in order to develop a better understanding of micro-firm growth. As not

³⁸ Only challenges perceived by at least three micro-firms are reported

much research has explicitly focused on micro-firms, this explorative study helps to build knowledge about which challenges the entrepreneurs driving these companies perceive. This is a relevant endeavor, as many of these companies never embark on a growth path, and one possible reason is that many micro-firms do not manage to overcome the perceived challenges for growth. If they could be supported in this process, it might be possible that more micro-firms grow and become SMEs in the future.

This study finds that the entrepreneurs of micro-firms perceive a lack of time as a main challenge for growth. While some policy-related publications (e.g. Persson, 2011a) had pointed out this challenge previously, our findings illustrate that the perceived lack of time is not an individual, isolated factor, but is intimately intertwined with a number of other challenges. For example, a perceived lack of time reduces the attention given to growth-related activities and does not allow to develop and/or adjust the organizational structure to optimally fit the business needs (see also Tell, 2012). In addition, growth is hampered, as the identification and selection of potential new employees (or, in some cases, co-owners) is considered as too time-consuming. This leads to an even higher work-load for the entrepreneurs, who have less possibility to e.g. attend trainings to increase their relevant skill base. This high work-load also increases the perceived threat of the business environment (including competitors), as less information than necessary can be gathered for decision-making and company development. As we have pointed out in our discussion of the individual factors, these different factors are highly interrelated, making it difficult for micro-firms to pinpoint which factor hampers the growth of their firms the most.

Another conclusion can be drawn from our study. Penrose (1959) had suggested two different connotations of business growth. As we had pointed out in the introduction, most of the research to date operationalizes business growth as an increase in amount, neglecting the second connotation of growth as a process of development and improvement of quality. When the entrepreneurs in our sample talked about general challenges and growth-related challenges, they almost exclusively used a development-oriented reasoning. Increases in amounts as such did not play a role in their reasoning about general challenges or even challenges for growth. And, consequently, very few entrepreneurs departed from an imaginary future state of the firm as their starting point for the identification of growth-related challenges. Thereby, our study confirms what Achtenhagen et al. (2010) recently proposed, namely that academic research on business growth is too little concerned with how practitioners perceive and define growth and which aspects they find relevant for their growth and development processes. For practitioners, the journey of development is in focus when talking about business growth, while achieving an increase in amount (such as higher profitability, market share or a number of employees) is rarely seen as an aim in itself.

In addition, we find that patterns of how challenges for growth are perceived by micro-firm entrepreneurs differ between firms with different types of characteristics; in our study age, industry and location. For example, the entrepreneurs of micro-firms located in the incubator tended not to perceive regulations as a main challenge, while those outside the incubator did – confirming previous findings that the proximity to an incubator helps taking advantage of relevant information and early-stage support. This implies that growth is a more complex phenomenon than suggested by many previous studies on small firm growth.

Practical Implications

Several practical implications can be derived from our results. Firstly, if a micro-firm does not possess adequate knowledge or capabilities when it comes to regulations, tax or

accounting, its entrepreneurs might want to consider the advice of external consultants. While this incurs some costs, those can be outweighed by saving time, and eventually money, and it helps to keep the accounting in balance, providing the micro-firm better overview and control of the development of the business activities. Secondly, as the scarcity of the resource *time* is the challenge perceived to dramatically impact opportunities for growth in micro-firms, time management and priority setting strategies should be actively developed to support development and growth. Bootstrapping and the use of personal networks (which is facilitated when located in an incubator) can further help to address this challenge. Third, many micro-firms struggle with gaining industry acceptance and trust from customers. Here, a number of companies pointed out how much easier this issue had become for them once they organized as limited companies. Therefore, micro-firm entrepreneurs might consider to change from sole proprietorship into a limited company at an early stage.

Limitations and Further Research

A limitation of this study could be seen in its single-country focus on Sweden. Yet, using a non-US sample serves to develop the existing knowledge base (cf. Aldrich, 2000). In addition, the Global Entrepreneurship Monitor reports suggest that Sweden has similar entrepreneurship-related characteristics as other European countries, such as the UK, the Netherlands or Spain, and is similar to the average found for Europe (e.g. Reynolds *et al.*, 2001). Yet, certain growth-related factors, such as risk-taking preferences, may have cultural roots, and thereby restricting the sample to a single country also limits the generalizability of the findings (Hayton *et al.*, 2002). The active involvement of institutional investors may also be particularly strong in Sweden because of their generally long-term investment horizon. Thus, future research would benefit from examining multiple countries, representing multiple cultural groups and institutional environments. Also, one could argue that the sample size of 30 micro-firms is a limitation of this study. As we had pointed out above, our sample might be more growth-oriented than the population of micro-firms in general, as incubators typically select firms with a growth orientation. While this leads to a lack of generalizability of our findings in a statistical sense, the qualitative approach chosen allowed us to obtain detailed insights into the perceived challenges and to explore patterns in these perceptions. Yet, further research is needed to validate our findings for larger samples, possibly in relation to different contingency factors. As we found that different challenges for growth are perceived by entrepreneurs running micro-firms with different characteristics, an implication for future research is to further explore more how such characteristics of the sample might lead to patterns in results, which requires an investigation of these characteristics in their own right (i.e., beyond entering them into statistical analyses as control variables). After all, a better understanding of the perceived challenges for micro-firm development and growth might help these firms overcome them - which would imply a positive impact on economic development and social welfare.

As pointed out above, much of the research on small-firm growth has tested the impact of individual factors, or a combination of such factors in clear-cut, simple relationships, on business growth (for an extensive review of these, see Davidsson *et al.*, 2010). Our findings show that these factors do not operate in isolation, and that it is difficult for founders to assess the effects of individual, isolated variables on company development. Thus, to gain a better understanding of micro-firm growth, more studies are needed that attempt to capture this interrelatedness of different factors contributing to or hampering growth. More studies capturing Penrose's second connotation of growth as development over time are especially called for.

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Firm	Industry	Founded	Experienced growth as increase in amount?*	Ambition to grow?	In business incubator?
1	Advertising and communication	2005	Yes, turnover, employees and sales increased.	Yes	Yes
2	Electronics	2005	Yes, increased sales	Yes	Yes
3	Consulting activity	2010	Yes, more employees that generate more sales and turnover.	Yes	Yes
4	Electronics	2007	Yes, early stages of growth	Yes	Yes
5	IT	2009	Yes, fast growth in the past 1.5 years	Yes	Yes
6	Automations solutions	2011	Yes, hired one employee	Yes	Yes
7	Consulting activity	2004	Yes, more orders	Yes	Yes
8	Consulting Activity	2005	Yes, doubled turnover each year	Yes	Yes
9	Consulting activity	2010	Yes, increased sales	Yes	No
10	Consulting activity and education	1996	Yes, increased sales	No	No
11	Service Firm (Tour Packages)	2005	No	No	Yes
12	Wholesaler for fasteners	2001	Yes, hired 5 people	Yes	No
13	Advertising and communication	2009	Yes, more customers, increased sales	Yes	Yes
14	Design	2011	Too soon to tell, but has only been in business for 3 months and have already made sales	Yes	Yes
15	Iron and steel industry	2005	Yes initially, but was affected by the recession.	Yes	Yes
16	Telemarketing sports marketing	2003	Yes, both in employees and sales	Yes	No
17	Food retailing	2011	Yes, both in sales and employees	Yes	No
18	CRM systems	2010	Yes, hired one employee and increased sales	Yes	Yes
19	Accounting	2008	Yes, hired one employee	Yes	Yes

20	Consulting activity	2009	Yes, hired three people	Yes	Yes
21	Household services	2006	Yes, increased revenue	Yes	Yes
22	IT	2008	Yes, one more partner and increased turnover	Yes	Yes
23	Clothes	2000	Yes, hired one person and increased revenues	Yes	No
24	Arts	2008	Yes, hired one person	Yes	No
25	Retailor	2010	Yes, increased sales	Yes	No
26	Consulting Activity	2010	Yes, increased number of orders	Yes	Yes
27	Beauty saloon	2007	Yes, new branches and increased revenues	Yes	No
28	Beauty saloon	2008	Yes, increase in sales, new location	Yes	No
29	Sport equipment	2011	Yes, increased sales	Yes	No
30	Health	2007	Yes, hired one person	Yes	No

*As no official performance data is available on many of these companies, we asked the micro-firms whether they had experienced growth in terms of increase in amount (i.e. referring to Penrose's first connotation of growth)

Market Orientation and Service Innovation on Organizational Performance

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Market Orientation and Service Innovation on Organizational Performance

Abstract

In recent years, market oriented corporate culture has been considered a key element of organizational performance. Further in-order to accelerate the firm's performance, innovation plays a substantial role. According to de Brentani (2001), the extent to which products or services yield benefits to firms in terms of business performance is significantly affected by the innovativeness of the products delivered. This paper attempts to develop a conceptual model integrating market orientation, service innovation and how they affect the business performance. In addition, the researchers make an attempt to identify whether entrepreneur's personal characteristics moderate the above relationship. Several hypotheses are developed pertaining to the identified variables. The study is based on the hotel industry in Sri Lanka.

Key Words : market orientation, service innovation, personal characteristics of entrepreneurs, organizational performance, hotel industry

1. Introduction

Market orientation has been recognized as one of the key factors of organizational performance (Narver & Slater, 1990; Kohli & Jaworski, 1990). In recent years, an increasing number of research have been conducted on the concept of "market orientation" with regard to the small and medium enterprises (SMEs). Developing economies are experiencing massive institutional transformations, which present substantial opportunities and challenges for entrepreneurial firms attempting to grow their businesses. Furthermore, many developing economies are moving to market based policies as a way of stimulating economic growth and reducing poverty (Boso, Story, & Cadogan, 2013).

According to the extant literature, innovation also is an important function of business performance. Innovation has long been identified as one of the key sources of competitive advantage in business firms including in service sectors (Schumpeter, 1934). Indeed, innovations in services have led to the greatest level of growth and dynamism over the past several years in terms of economic activity. Consequently, innovations in service firms have become an important topic in business competition. The extent to which products or services yield benefits to firms in terms of business performance is significantly affected by the innovativeness of products delivered. Much of the research on innovation focuses on larger firms that have significant budgets and formal R&D centers. Yet smaller firms are often hailed as the source of future growth (McDermott & Prajogo, 2012). Oke *et al* (2007) find that SME tend to focus heavily on incremental, rather than radical innovation. In a different study, Oke (2007) look specifically at the service sector and document the effectiveness of formal practices to foster radical innovation in these service firms. Findings indicate that a robust relationship that is a positive and direct relationship exists between innovation and performance. However, focus on service sector is not in a satisfactory level.

The main purpose of this article is to investigate how market orientation and service innovation effect on SME organizational performance. Several research have been done on this area, but most of them focused on manufacturing sector and few research were in service sector. Although, the service sector is considered, poor attention was made on hotel industry. In Sri Lanka the tourism industry is booming rapidly and the government is committed to a sustainable tourism development strategy.

All these studies considered market orientation and innovation separately. In this study the researchers are incorporates market orientation and service innovation and how they affect the business performance. The study is carried out taking a sample from Hotel industry in Sri

Lanka. Prior research have investigated that external environment factors can moderate the extent of market orientation's effects on business performance. However, entrepreneur's personal characteristics have significant role on venture creation process and business performance. Poor prior attention has been paid on whether entrepreneurs' personal characteristics such as education, age, prior experience moderate the relationship between market orientation and service innovation. Therefore in this study the researchers attempt to develop a conceptual model by integrating market orientation and service innovation on business performance and check whether entrepreneur's personal characteristics moderate the above relationship.

This paper will proceed as follows. First section of the article describes the literature on market orientation, service innovation and business performance. Second part will illustrate the conceptual framework and the third section will describe the methodology. Finally the paper include the conclusion and the references.

2. Literature Review

2.1 Market Orientation

According to both marketing academicians and marketing managers proclaimed that, market orientation will improve its market performance. Further as per the textbooks, scholarly papers and speeches delivered by marketing practitioners and academicians, the market orientation is the very heart of modern marketing management and strategy. The market orientation construct reveals two prevalent blueprints. First Kohli and Jaworsky (1990) define the market orientation as "the organizationwide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organization wide responsiveness to it"

In support of this framework, the definition of Narver and Slater (1990) consist with three behavioural components. They are customer orientation, competitor orientation, and inter-functional coordination and two decision criteria; along term focus and profitability. Customer orientation and competitor orientation include all of the activities involved in acquiring information about the buyers and competitors in the target market and disseminating it throughout the business. The third behavioural component, interfunctional coordination, is based on the customer and competitor information and comprises the business's coordinated efforts, typically involving more than the marketing department, to create superior value for the buyers. In sum, the three behavioural components of a market orientation comprehend the activities of market information acquisition and dissemination and the coordinated creation of customer value. (Narver & Slater, 1990) This leads to the following hypothesis.

H1: Market orientation has a positive impact on business performance.

2.2 Service Innovation

Innovation has long been recognized as one of the key sources of competitive advantage in business firms (Schumpeter,1934). This is also applicable for the service sector as well. Indeed, innovations in services have led to the greatest level of growth and dynamism over the past several years. As (de Brentani, 2001) suggests, the extent to which products or services yield benefits to firms in terms of business performance is significantly affected by the innovativeness of the products delivered. Services are a significant part of most major

economies, and innovation is widely reviewed as a significant driver of growth in firms (Agarwal, Erramilli, & Dev, 2003). Though service sector is growing rapidly, the service innovation is under researched compared to manufacturing sectors.

Service innovation may take a longer time to have impact on business performance in service than in manufacturing. The service may be perceived as being better, but this improvement may not be an obviously linked to innovation as in the realm of manufactured goods (Voss, Johnston, Silvestro, Fitzgerald, & Brignall, 1992) Lastly Voss *et al.*(1992) suggest that while service innovation are commonly more rapidly implemented than manufacturing based innovations, they are also more easily copied. This situation may discourage service firms from becoming involved in innovation projects, especially more radical ones, for the firms are less likely to maintain lengthy benefits than their counterparts in manufacturing environments. Consequently, the emphasis of innovation in services is often placed on continuity rather than newness (Voss *et al.*, 1992). The similar finding could be seen by the research done by Oke et al (2007) reveals that SMEs tend to focus heavily on incremental, rather than radical innovation. Again in a different study Oke (2007) look specifically at the service sector and document the effectiveness of formal practices to foster radical innovation in the service firms.

In the present context, much of the research on innovation focuses on large scale organizations, who have significant budget on research and development. Yet researches on innovation on SMEs are very little. In this study, researchers tries to study about the impact of market orientation and service innovation on organizational performance and the research focus on the hotel industry in Sri Lanka. There are researches on SMEs on market orientation and innovation separately. But there are dearth of research could be found by combining the market orientation and service innovation in Sri Lanka. There are very few studies have been carried out on market orientation, innovation and performance in service firms. But these research they have not looked into personal factors into consideration. Therefore the theoretical gap identified in this research is how market orientation and service innovation effect on business performance and this effect will be moderated by the personal factors of entrepreneurs such as age, sex, and business experience etc. This leads to the following hypotheses.

H2: Service innovation has a positive impact on business performance

2.3 Entrepreneur's Personal Characteristics

Personal characteristics of entrepreneurs are vital to study with regard to organizational performance. In this study, the researchers selected age, education and experience as the personal characteristics and attempt to measure the impact of it on business performance. Hence, the personal characteristics considers as the moderating variable in the model. Accordingly, the following hypothesis is formulated by the researchers.

H3: Entrepreneur's personal characteristics moderates the relationship between market orientation, service innovation and organizational performance

2.4 Business Performance

Performance is a multidimensional concept. In previous studies, growth is used as a proxy for business performance (Brush and Vanderwerf,1992). Growth as a measure of performance may be more accurate and accessible than accounting measures of financial performance (Zahra, 1991). Performance is multidimensional in nature, and it is therefore advantageous to integrate

different dimensions of performance (Wiklund and Shepherd, 2005). Business performance of SMEs can be measured by both objective and subjective measures (Murphy et al., 1996; Gupta and Govindarajan, 1984). Therefore, to capture different aspects of small business performance, we combin financial and non-financial performance measures for this study. Sales growth, employment growth, profit (pre-tax), market share growth and owner/managers' satisfaction are used to evaluate business performance.

3. Conceptual Framework

The conceptual framework of the research is presented in figure 1. According to the conceptual framework, it is clear that, the market orientation and service innovation will lead to organizational performance. A potential moderator has identified as the personal characteristics of entrepreneurs.

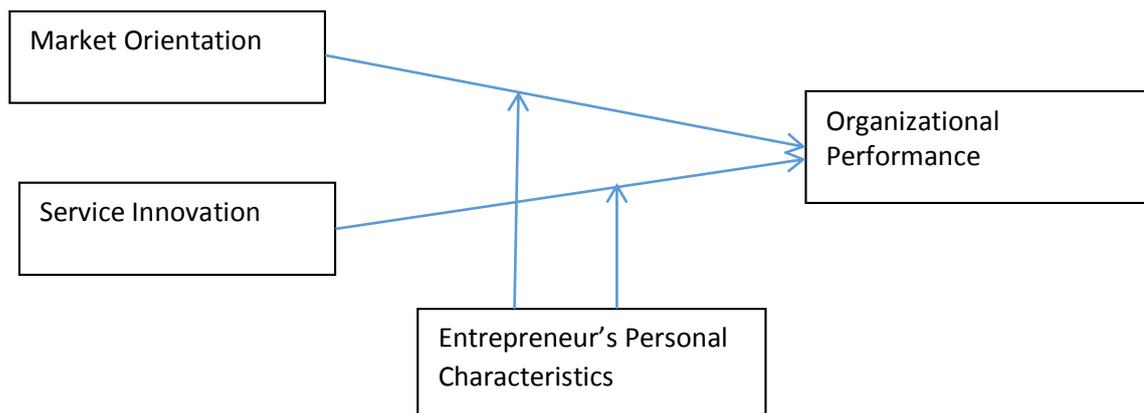


Figure 1: Conceptual Framework

Two blue prints of market orientation is prevailing by two main studies. One study by Kohli A.K and Jaworsky B.J (1990) and the other study by Narver J.C. and Slater S.F. (1990). For this research purpose the researchers have selected the variables developed by Narver and Slater in 1990. Consequently, Narver and Slater stresses three behavioural elements which build market orientation namely Customer Orientation (CuO), Competitor Orientation (CoO), and Inter-Functional Coordination (IFC)

Researchers have proposed several service innovation typologies. One of the criteria which have been used as the basis for establishing the typologies is the degree of radicalness of innovation. Radical innovation is fundamentally different from incremental innovation (Ettl *et al.*, 1984; Dewar and Dutton, 1986; McDermott and O'Connor, 2002). The work of March (1991) on exploratory and exploitive innovation received attention for its discussion regarding the importance of both types of innovation in long term period. According to March (1991), Exploration innovation is often associated with more breakthrough or radical departures from existing offerings. It is associated with new to world products or services, creating new markets, and the identification of needs for emerging customers and markets. Exploitive innovation is associated with extensions to existing products and service lines. Existing knowledge is utilized to further incrementally improve the offerings to satisfy customers. Consistent with this notion, in this study the researchers measure the level of service innovation by considering the level of exploration innovation and the level of exploitive innovation.

Organizational performance is the dependent variable in this conceptual model. To measure the organizational performance the researchers will use sales growth, employment growth, profit (pre-tax), market share growth and owner/managers' satisfaction as key variables. Sales, profit, and employment information will obtain through interview with respondents and calculated the average growth rate. Market share growth will measure based on self-reported performance by the respondent from each SME.

4. Method

This research is quantitative in nature. The sample consists with 150 small and medium scale hotels in Sri Lanka. The hotel industry was selected since the government is expecting a wider role from the tourism industry for the sustainable economic growth. A stratified random sampling technique is used for the purpose of data collection from the list of registered hotels in Hotel Corporation in Sri Lanka. A questionnaire will serve as the primary means for data collection. Regression analysis and correlation are used to analyze the data.

5. Conclusion

This research is aimed to identify the relationship between market orientation, service innovation and business performance in hotel industry in Sri Lanka. In addition, the study attempts to recognize whether the entrepreneur's personal characteristics will moderate the above relationship. The study focused on the hotel industry in Sri Lanka, since it is booming rapidly after the ethnic war.

The market orientation is measured by three behavioural components which are customer orientation, competitor orientation and inter-functional coordination as per the definition of Narver and Slater in 1990. The service innovation is measured by the level of exploration innovation and the level of exploitive innovation. The dependent variable, which is the organizational performance, is measured by using both subjective and objective measurements. They are sales growth, employment growth, profit (pre-tax), market share growth and owner/managers' satisfaction. According to the prevailing literature three hypotheses will develop to measure the relationship with key variables. The empirical study will further clarify the issue. Hence the results of this study will have an important implication for entrepreneurs, investors, researchers etc. by developing better understanding in the venture creation process and success of businesses in terms of both theory and practice.

6. References

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Identifying market opportunities when operating in a challenging environment

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Identifying market opportunities when operating in a challenging environment

Principal topic

There is limited knowledge of how entrepreneurs in challenging environments identify and exploit sustainable market opportunities. Therefore, this study explores how the Tongan National Youth Congress (TNYC) developed an innovative organic, sustainable virgin coconut oil (VCO) venture in the face of severe challenges. Making better use of natural resources such as coconut palms to derive greater export income is a prime concern of economic development agencies in small island developing states. We review the literature on opportunity identification from four domains – commercial, social, sustainable and institutional entrepreneurship – and develop a theoretical model to guide our inquiry. We conclude by showing how this study makes a valuable contribution to the emerging literature on sustainable entrepreneurship.

Background

TNYC is a non-governmental organization that assists the young people of Tonga to gain the skills needed to become productive members of society. TNYC uses a non-denominational approach to encourage the wide participation of youth in social, cultural, sporting and economic events and training programs. The organisation's latest initiative is to assist remote communities to establish virgin coconut oil (VCO) enterprises that are managed by young people in partnership with village leaders. Unfortunately all three of the initial VCO production facilities established in the Ha'Apai island group were destroyed by Cyclone Ian in January 2014 and it was expected to take at least a year before these could be rebuilt. Thus TNYC provides a salient case of the challenges associated with market opportunity identification and exploitation in a climate-threatened context.

Literature review and research question

Small island developing states (SIDS) need to create innovative solutions that tackle social, environmental and economic challenges in the face of climate change. The conversation about linking entrepreneurship and resilience has begun, but the pathway is unclear. Entrepreneurship research has increasingly focused on the nexus of the entrepreneur and the opportunity (Eckhardt and Shane 2003, Shane and Venkataraman 2000). However, structuration theory suggests that the agent and structure coevolve (Sarason, Dean and Dillard 2006). This suggests that entrepreneurial behaviour, such as seeking opportunities to solve the economic, social and ecological challenges faced by climate-threatened communities, is likely to be dynamic and context specific (Chell, Nicolopoulou and Karataş-Özkan 2010, Hindle 2010, Ratten and Welpe 2011).

Therefore, our research question is: How can a social enterprise identify sustainable market opportunities in a climate-threatened context? Our principal aim is to identify the key endogenous and exogenous factors that influence the opportunity identification process to help develop theory in this area.

Research methodology

Ardichvili, Cardoza and Ray (2003) have proposed a model of opportunity recognition and development which acts as a starting point for our own inquiry. We have supplemented the model with insights from the sustainable development opportunity identification models of

Patzelt and Shepherd (2011) and Gray et al. (2014), as well as relevant concepts from the sustainable, social and institutional entrepreneurship literatures.

The authors and utilised a triangulation research design (Jick 1979, Sackett & Larson 1990, Scandura & Williams 2000, Yin 2003) to gather data in Tonga. First, we conducted a content analysis of historical documents (including annual reports of TNYC and its funders). This was supplemented with thematic analysis of in-depth interviews with the organization's governance, management, suppliers, funders, service partners and external stakeholders. Finally we conducted an ethnographic study of a remote island community which stood to benefit from a new VCO venture.

Results and implications

The results suggest TNYC's international market opportunity identification process has been facilitated by close social ties with key personnel in aid agencies such as Oxfam NZ and with Women in Business Development Incorporated (WIBDI), a community-based entrepreneurship development agency in Samoa. WIBDI is the sole supplier of VCO to The Body Shop and has been sharing its knowledge with other community-based organisations in the South Pacific. WIBDI also volunteered to help TNYC achieve organic accreditation and to form links with its own overseas distributors.

TNYC's exploitation of VCO was enhanced by knowledge of the local socio-cultural and economic environments. As a result, it developed a unique business model that provides employment for young people – a critical issue facing remote communities – while helping them to navigate the cultural requirements of gift giving. The latter is achieved by donating a proportion of profits from the VCO manufacturing plants to local infrastructure development.

The findings support previous research that suggests the identification of sustainable entrepreneurship development opportunities is dependent on key actors having the necessary motivation, knowledge and skills (e.g. Patzelt & Shepherd 2011, Shepherd & Patzelt 2011, Gray et al 2014). The importance of personality traits such as creativity and optimism in the face of challenging environmental and market conditions (Ardichvili, Cardozo, & Ray, 2003) is also apparent after Cyclone Ian destroyed the first three manufacturing sites.

However, what appears to be missing is a sense of sustainable market orientation (Mitchell, Wooliscroft & Higham 2010, Hult 2013) and well-developed international marketing skills. The original distribution relationships promised by WIBDI failed to eventuate due to an unexpected over-supply of VCO in Samoa, which left TNYC scrambling for alternative distributors. Future research could explore how international marketing and networking capacity building could help ameliorate any negative consequences of agency-structure coevolution in turbulent economic and ecological environments. Deeper insights are also needed into how nascent social entrepreneurs can avoid potential pitfalls such as over-reliance on a few core social relationships that may hinder wider network development.

Examining Factors Influencing Public Funding Decisions on Entrepreneurial Business Plans

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Abstract

This paper examines how different factors may influence decisions by public funders to support entrepreneurial ambitions, based on submitted business plans. The intention of the research is to generate new insights on methods of assessing entrepreneurial business plans and towards the design of an entrepreneurial scorecard that can assist funding decision makers; particularly in developing countries. An analysis of 1,728 business plans submitted to a nation-wide public seed funding programme in Colombia during the period 2012-13 is used to examine the role of different factors on the funding decision process. Using six primary variables that represent factors thought to influence the level of acceptance or rejection of business plans, we conclude that in general, demographic, industry and process variables (i.e. *external factors* related to the funding process itself) appear to have little negative effect on entrepreneurs' access to public seed funding, suggesting that decisions are mostly based on other variables directly related with the business plan itself (i.e. *internal factors*). Findings identify strong predictive power of *location by department* (versus weak predictive power of location by city or region), which suggests that processes for administering a national funding programme, when consistently applied across different regions, can reduce the effect of external factors influencing funding decisions. However, entrepreneurs in some peripheral areas may be disadvantaged in establishing a business because of the nature of the local supportive environment.

1 Introduction

Sourcing adequate capital is a major challenge for new businesses, and particularly seed capital for product development, prototyping and testing an idea in the market (Gregson, 2014). Many early-stage ventures are not yet profitable - some still have to make their first sale. For those ventures led by nascent (i.e. new) entrepreneurs, the absence of a business track record – along with an unproven product, service or market need – makes these risky investments (Aernoudt & Erikson, 2002). Entrepreneurs are generally unable to secure debt loan financing as a source of capital, given the lack of collateral that can be offered to the bank to secure the loan. Adequate access to early-stage financing has important implications for the economy, given the role that new ventures play in employment growth, competition, innovation and export potential (Cassar, 2004).

The business plan remains a common prerequisite for securing external financing, although many entrepreneurs demonstrate their capability in starting a new business without one. However, the relationship between entrepreneurial business plans and external financing has received little attention in the literature. One reason is the lack of available data sets and access to funders who are willing to disclose their financial information and financial decision making processes. Further, previous studies on the role of business plans in successfully starting a new business tend to be descriptive and anecdotal rather than empirical in nature.

This paper investigates the determinants of access to public seed funds through business plans submitted by entrepreneurs at a national level and addresses a number of deficiencies in the literature. First, by examining a large data set of business plans, the study generates testable variables to reveal how different factors may affect decisions by public funders to support entrepreneurial ambitions. Second, by gaining access to a nation-wide data set and incorporating the views of those involved in the funding process, this study overcomes issues of financial information disclosure and generalisation problems associated with samples of limited geographical or industry scope (Cassar, 2004). Third, the paper contributes a research

design to generate empirically validated evidence from which it would be possible to develop an entrepreneurial scorecard that can be used to improve the seed funding process for entrepreneurs and public seed funding administrators.

The paper is structured as follows. Section two provides a background to the study, which includes a review of literature on sources of entrepreneurial finance, business plans, methods for assessing business plans and funding decisions. Section three establishes the research focus for the paper, including a description of the case used in the study and the three phases of the research which constitute the mixed-method research design. Section four discusses the findings and section five offers conclusions and establishes contributions from the study and future research recommendations.

2 Background to Study

2.1 Sources of Entrepreneurial Funding

Funding sources for new businesses typically fall into three categories: personal sources; equity finance; and public funding. Personal sources refer to personal, readily accessible finance available to the entrepreneur or founders to fund the new venture. In the United Kingdom (UK), it is estimated that 85% of new business start-ups rely on internal finance (Story and Greene, 2010). Equity finance usually refers to various forms of independent (i.e. private equity) investments that are provided by business angels (BAs), venture capitalists (VC) and private equity (PE) funds. Provision of public sources of seed funding is a popular policy tool for increasing access to early-stage finance for new ventures; with the birth of new ventures identified as a cornerstone for maintaining competitive advantage and creating economic wealth (e.g., Servon, 2006; Blanchflower and Oswald, 1998). Reasons used to justify public support for seed funding include the high rates of early-stage business failure and poor access to finance for certain societal groups (e.g. less educated, minorities, etc.) and for entrepreneurs in peripheral geographical locations (Small Business Service, 2004).

Public sources include funds available through research councils, investment grants, public loans (from enterprise agencies, business incubators, charities, etc.). Smaller public funding is used to support “proof-of-concept” activities and initial start-up activity that may include marketing and promotion activity or funding for office space. In some regions and countries, public funds are available that provide grants or interest-free loans to support company formation activities. The term “seed capital” is commonly used to describe the funding necessary to start a business, which may be used to purchase equipment, establish premises and provide working capital until sales can cover business costs (Small Business Service, 2004). Seed capital also refers to the capital required for testing the feasibility of a commercial concept or a product prototype prior to market exposure. Such activity is seen by investors and most industry specialists as embracing the highest level of risk and uncertainty, given that the market acceptance of the business remains uncertain. As well, prototype or proof-of-concept projects commonly supported by seed capital are very difficult to conduct or assess as an exclusively commercial activity (Murray, 1999).

Microfinance for entrepreneurship has received growing interest from scholars recently (Berrone et al, 2013), with the availability of public sources of seed capital identified as positively influencing entrepreneurial venturing decisions. In the US, public funding (in the form of Small Business Innovation Research (SBIR) grants), along with credit cards and earnings from a salaried job are among the most important sources of funds for entrepreneurs in their decision to start up a new venture (Elston and Audretsch, 2011). Studies in some

developed countries also show that access to public funding leads to better growth outcomes (Capelleras-Segura et al, 2009), although measurement of the performance of new businesses receiving public seed funding is beyond the scope of this study.

2.2 Business Plans

The business plans (BP) is a common tool used by entrepreneurs to raise investment for their businesses. The BP is identified as a formal document that articulates the key areas of the new business opportunity; legitimises the new business with external stakeholders; and helps the entrepreneur to communicate the goals, strategies and operational tasks of the business to others (Castrogiovanni, 1996; Stone and Brush, 1996). A new venture BP is a plan about an uncertain future, where limited historical sales and market-related transactions are available to forecast the future (Gregson, 2014).

Much debate exists over the merits of the BP and whether or not the entrepreneur should dedicate considerable time and effort in formulating one (Blank, 2013). And while the distinction is made between the *process* of business planning, which are the activities performed to develop plans, and the *outcome* of business planning, which is the written business plan, the central issue is whether or not such effort leads to improved new business performance (Gibson and Cassar, 2005; Matthews and Scott, 1995).

However, the BP remains an essential requirement for the entrepreneur seeking to raise external funding (Gregson, 2014), as it allows the potential investor to assess details of the business and qualifications of the entrepreneur and management team, based on information presented in the BP (Chen et al, 2009). The BP also allows potential investors to compare different business opportunities in which to invest, which is somewhat similar to the capital budgeting process (CBP) used by large firms - where a standard, comparative process is applied to an “over-subscription” of projects competing for central funds (Gregson, 2014). Those projects that can demonstrate tangible, measurable returns are prioritised over those with difficult-to-measure outcomes. Successful projects are those that clearly identify the problem to be solved; offer an effective solution and promise a higher investment return (in comparison to other projects); and can be financed with available funds.

Although different criteria may be applied by different investors, literature identifies the influence of different information presented in the business plan influencing investor interest and decisions to invest. Some factors are related to the business, industry and location while others are related to the entrepreneur or founding team, such as various types of domain and procedural knowledge, i.e. market, technical or managerial, industry experience, etc. (e.g. Conner and Prahalad, 1996; Shane, 2000; Siegel and Renko, 2012; Bakhru, 2004).

More recent studies have questioned a “fully compensatory model” of investment decision making, in the case of business angels, to suggest that such investors use a short-cut decision making heuristic, known as “elimination-by-aspects” to reduce the available investment opportunities to a more manageable size (Maxwell et al, 2011). In other words, if a business plan is diagnosed with a fatal flaw, it is rejected at the earliest stage of the decision making process, but opportunities with no fatal flaws progress beyond that stage. While BPs are widely recognised as a screening tool in private equity investment decisions, few studies have examined how they are used in decisions by public funders who may apply more standardised criteria to make funding decisions. Such standardised criteria can be applied as scoring methods which are briefly reviewed in the next section.

2.3 Methods of Assessing Business Plans

For private equity investors seeking to invest in new businesses, an identified challenge in assessing the risk of investing in an unknown entrepreneur and his/her new business relates to the multiplicity of contributing attributes of business value. Investors typically deploy systematic evaluation methods for making decisions on investment, which range from intuitive judgement (Gregson, 2014) to complex options models (Mitchell and Hamilton, 1996; Black and Sholes, 1973).

In most developed countries, banks and financial intermediaries typically engage in *credit scoring*, especially in retail credit and small to medium-sized business (SME) lending. Credit scoring is defined as a statistical approach using historical credit performance data to predict the probability that a credit applicant will default or become delinquent (Hand and Henley, 1997). Financial theory predicts that if lenders have complete information about potential borrowers who need financing to start their ventures, and are not prone to opportunistic defaults by entrepreneurs, then all positive Net Present Value (NPV) projects will be funded (Parker, 2001). In reality, lenders lack perfect information about a borrower's actual abilities and intentions to repay, and can be prone to opportunistic defaults by entrepreneurs (Aghion and Bolton, 1997).

By analysing the borrowers' past behaviour, a statistical credit scoring model establishes the association between credit performance/default and certain characteristics which are available at the point of decision-making. This is expected to reduce the opacity problem and allow lenders to set the contract terms more accurately to reduce future credit losses and improve expected revenues on their credits (e.g. Berger and Udell, 2007). Credit scoring is also a popular approach because of its simplicity and wide applicability to a large population and there is some evidence that adoption of credit scoring increases credit availability (e.g. Berger et al, 2005).

Information about the business available to lenders is most often taken from financial statements. Previous research has investigated SMEs financial measures associated with default (e.g. Altman & Sabato, 2007; Fantazzini et al, 2009; Lin et al, 2012). Measures found to be associated with success/failure include those of profitability, leverage, liquidity, cash flow management, growth and efficiency. However, accounting information is typically not complete or accurate for many small businesses, and one cannot rely on financial statements for new ventures that do not exist yet. This led researchers to consider the relationship between business success and characteristics of the entrepreneurs/business owners; in particular their management abilities. Education is often seen as an important predictor of the entrepreneurs' ability to run the business (e.g. Larson and Clute, 1979, Lussier, 1995). Specific aspects of running a business have also been found to be significantly associated with the successful/unsuccessful venture performance and include: planning, financial/ accounting knowledge, marketing expertise and openness to professional advice (e.g. Maes et al, 2005; Carter and Van Auken, 2006; Lussier and Halabi, 2010).

While the above inputs into risk assessment of new business ventures can be described as *internal* factors, some authors have investigated alternative types of information that can be described as *external* factors (Altman et al., 2008, 2010; Orton et al, 2014), with type of industry and region (i.e. location of business) being amongst the most commonly used. Earlier, Caves and Porter (1977) describe how different market and industry factors will affect the level of financing required by new businesses, including the barriers to entry for certain market sectors. These barriers may include structural entry barriers, such as for manufacturing; a sector characterised by fixed cost requirements for capital equipment and the need for specialised

knowledge; or strategic entry barriers, where firms compete with differentiated products, intellectual property rights, brand recognition and so forth (Bain, 1956). Entrepreneurs will also differ in their abilities to overcome particular entry barriers in the sector they seek to enter, making some financing options unavailable to them (Cassar, 2004).

More recently, Wilson and Altanar (2014) propose a model for assessing risk in newly incorporated companies in the UK based on publicly available information and prior to the company files the first set of accounts. They establish that board and directors' characteristics (internal) along with the regional indicators (external) are significant predictors of default. Martens et al. (2011) analysed Flemish young companies and highlight the importance of different types of resources (e.g. education of employees – internal factors) for company success that are moderated by market demand (external factors). While these models suggest the importance of internal factors, i.e. details contained within the Business Plan, as well as external factors influencing risk assessment of new businesses, few studies have empirically validated the influence of these different factors.

2.4 Funding Decisions

In the context of entrepreneurial business plans being considered for public seed funding, the above literature suggests that there may be a number of external factors which may influence the outcome of funding success. Hence, in addition to the information about the business itself, as disclosed by the entrepreneur in the business plan, there may be external factors that will affect the funding process. Although some public funding schemes use some kind of credit scorecard (e.g. national research and programmes, etc.), we find few studies that make explicit how such scorecards are constructed and applied or what the effects or implications are in deploying such scorecards. Scoring models derived for the purposes of screening for business plans should ideally use information about the applicant (i.e. entrepreneur) as well as the fundamental characteristics of the business in question. Industry factors, including business cycles, and macroeconomic factors, should be considered in the model to mitigate the sensitivity of economic trends in small business lending (Tsaih et al, 2004).

What is also not clear from the literature is what impact particular factors (internal and external) have on the likelihood of an entrepreneur being granted funds through the submission of a business plan to a public funding programme. The evidence in determining factors affecting the granting decision is relevant in assisting future entrepreneurs, particularly from developing countries, who are required to submit business plans as part of the seed funding application process. An identified challenge for such study is the lack of available data sets and access to funders willing to disclose their financial information and financial decision making processes.

3 Method

The study deployed statistical methods, in order to identify factors that may influence the fund granting decision, and additionally qualitative methods to provide map out the funding process (see Figure 1) and triangulation of the statistical results. From an initial assessment of the data, it was determined in this paper to consider observed *external* factors which may influence public seed funding decisions on entrepreneurial business plans (with *internal* factors to be examined in a subsequent paper). These external factors might be felt to influence funding outcomes and their exploration provides assistance in determining future policy decisions. In order to empirically validate the influence of external factors on public seed funding decisions, the authors identified an appropriate case which provides public seed funding to entrepreneurs at a national level, based on their business plan submissions. The authors were granted full

access to available data by the administrator of the fund. We describe the study case and research design below.

Figure 1: Research Design

Phase 1	<ul style="list-style-type: none"> • Semi-structured interviews with FE administrators and those engaged in funding process • Initial thematic analysis of data • Descriptive analysis of funding process
Phase 2	<ul style="list-style-type: none"> • Dataset description • Descriptive analysis of external factors
Phase 3	<ul style="list-style-type: none"> • External factors and the fund granting decision: a) contingency table analysis; and b) calculation of information value (F) of each variable

3.1 Case Description

FondoEmprender (FE) is a National fund in Colombia, created to support entrepreneurs who are completing technical studies at SENA (*Servicio Nacional de Aprendizaje*), National Learning Service Agency, a public agency responsible for the development of educational opportunities and professional and vocational skill delivery across all regions of Colombia. FE was created by Article 40 within Law 789 (Colombian Congress, 2002) with the primary objective to fund business initiatives from postgraduate students, undergraduate students or professionals from any recognized educational institution³⁹.

FE aims to support productive projects that integrate knowledge acquired in formal and informal education. It provides seed capital to transform such projects into new businesses. The sole criterion for applying is to be a student who is enrolled in the two (2) last semesters in a program of higher education, people who have completed courses within the last twelve (12) months, university graduates whose first degree has been obtained during the last 24 months, students or graduates who are pursuing specialization and/or masters who have completed and been certified within the past 12 months. It not only offers seed finance but also start-up, expansion and larger stage financing to a specific type of population. Even though calls are opened at a national level, there are specific calls that target specific industry sectors and entrepreneurs. In order to prioritize specific populations, one call can have more than one deadline and hence result in various cohorts. This strategy allows FE managers to organize accepted business plans and generate more similar conditions during each contest. Financial resources available are approximately £9m; therefore the main constraint for applying to the fund is having access and obtaining advice from an entrepreneurial unit registered with the fund. It is expected that the location of entrepreneurial units is expected to have an influence on who is applying for the fund.

3.2 Research Design

The authors obtained FE data which included business plan “projects” presented and assessed between 2012 and 2013. Information for each business plan included: identification number, name of the project, city, department, institution that validated the business plan, sector, level of funding requested, date of formalization and assessment results (i.e. suggested funding amount, business plan feasibility and justification of the amount approved). Access was also granted to administrators at FE who are responsible for the seed funding programme, in addition to other respondents engaged in the programme. Figure 1 shows the research design established for the study, which each of the four phases of research discussed further below.

³⁹According to Law 30 (Colombian Congress, 1992) and Law 115 (Colombian Congress, 1994)

3.2.1 Phase One

Initially, researchers made contact with senior administrators of FE in order to confirm access, to determine the extent of available data and to identify appropriate respondents who could provide detailed information and insights on the funding programme and process. This led to purposeful sampling; from which 17 people with different roles were identified (experts, leaders, coordinators and employees from governmental and academic institutions that promote entrepreneurship on behalf of the programme. Ten interviewees were chosen: three leaders from three different governmental institutions (Ministry of Work, Colciencias and Innpulsa), three employees from SENA, an expert in entrepreneurship that worked at SENA previously and three lecturers who lead entrepreneurial units in three different universities.

Semi-structured interviews were used to collect data useful to explore interviewees' perceptions, assumptions and purposes and to map out the funding process followed by FE. Structured interviews were not used because the aim was to gain insight from the diverse professional background of interviewees. Considering that observations are always made within a frame of reference, with certain expectations in mind (Blaikie, 2010), semi-structured interviews covered aspects such as: description of the national funding process, the role of each institution in the funding programme and the creation/existence of new businesses. Data was used to map out the funding process at FE and to provide 'context' to interpret quantitative results. This allows triangulation, complementarity and expansion of the data (Johnson and Onwuegbuzie, 2004).

3.2.2 Phase Two

In order to prepare the dataset for analysis, the first eight funding calls (from 2004 to 2010) were not considered; as the only data available for those calls was related with business plans that were granted funds. Furthermore, it was confirmed that application conditions changed substantially during that period, which would affect the quantitative analysis of the full data set. This resulted in an initial dataset of 7,303 business plans that applied for funding through 23 calls distributed within 71 cohorts⁴⁰ between 2010 and 2013. On examination of the data and discussion with funder it was decided to consider only the most recent data from 2012 and 2013. Applicants that did not fulfil minimum application requirements and repeat applications were not considered; this was done because the aim of our study is to identify significant factors that might impact the likelihood of entrepreneurs obtaining funds *in their first attempt* of applying, and not as a result of learning from the application and feedback process - which is out of the scope of this paper. The total acceptance rate, defined as the proportion of business plans that were granted funds out of the applications received, was 25% for this dataset. Acceptance rates were high and ranged between 20 and 32%.

3.2.3 Phase Three

In order to identify external factors that might impact the fund granting decision, a bivariate analysis was conducted according to two related approaches: 1) contingency table analysis to test the independence between each external factor and the funds granting decision (i.e. accepted, rejected); and 2) calculating the information value (F) of each external factor.

⁴⁰ Each call corresponds to a public call for business plans; however, some calls have offered several deadlines for presenting business plans.

Contingency tables are useful to test the following hypotheses:

H_0 : Variable_{*i*} and fund granting decision are independent

H_1 : Variable_{*i*} and fund granting decision are not independent

(1)

$$\alpha = 0.05$$

Results from such a hypothesis test can solely indicate if an external factor affects or not the fund granting decision. In order to quantitatively assess the predictive power in terms of separating accepted from rejected business plans, information value, F, was calculated for each variable:

$$F = \sum_{i=1}^n \left[\left(\frac{N_i}{\sum N} - \frac{P_i}{\sum P} \right) \times \left(\ln \left(\frac{N_i / \sum N}{P_i / \sum P} \right) \right) \right] \quad (2)$$

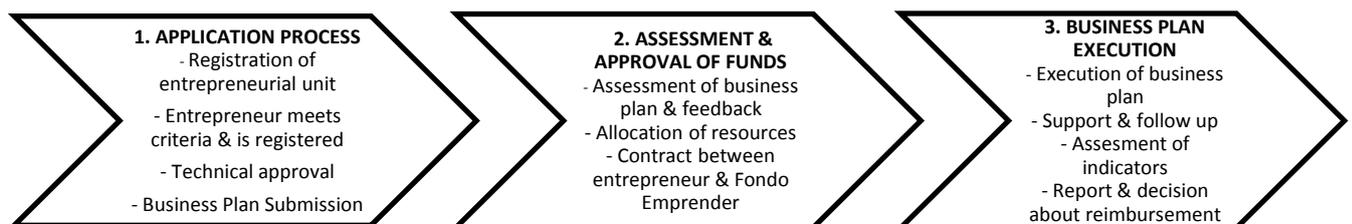
where N=rejected business plans, P=accepted business plans and i= index of the attribute and n= total attributes per variable. A given variable might be uncorrelated, have a very weak, weak, medium, strong and dominant information value depending on the value of F (Anderson, 2007). It is important to note that each variable was previously coarse-classified (i.e.: defining categories) to guarantee similar risk levels of acceptance per category (Thomas, 2009). The information value of each factor was then calculated.

4 Findings and Discussion

4.1 Funding Process Analysis

The FE funding process consists of three stages: 1) formulation of the business plan, 2) assessment of business plan and funding approval and 3) execution of business plan (see Figure 2). The key actors in the first and third stage are entrepreneurs and entrepreneurial units. In the second stage, an evaluator assesses the business plan, provides feedback to the entrepreneur and decides on the amount of funding to approve. A decision is made based on initial business plans and any additional information provided by the entrepreneur after initial feedback from the assessor. Entrepreneurs can improve their business plans and, if required, include additional information based on the initial feedback. Each stage is presented in detail below.

Figure 2: Public Seed Funding Process: Application, Selection and Execution
(adapted from interview data and secondary sources (www.FE.com))



4.1.1 Application Process

Potential entrepreneurs are required to secure advice from an entrepreneurial unit. Entrepreneurial units can be run by SENA or by third parties (e.g. universities, incubators, chambers of commerce or technological parks). Entrepreneurial units offer free advice service

to entrepreneurs that apply to FE; they report progress and continue to offer advice to entrepreneurs if they succeed in obtaining FE funds. This was confirmed by an interviewee: “*SENA offers support for the entrepreneurial activity to all the talented people... in the development of businesses plans.*”

Once an entrepreneur is accepted by an entrepreneurial unit, basic data related with the business plan is provided through a virtual platform: aims, market, commercial strategy, finances, cash flows, organizational aspects and the impact to the environment. Entrepreneurial units assist entrepreneurs in such process and during the development of the business plan. Once entrepreneurs decide on what call they will apply to depending on specific conditions, they provide evidence regarding the support of the entrepreneurial unit, their ability to sign a contract with the government and an authorization to conduct checks on their finances. FE has defined limits on the requested amount depending on the jobs a business is expected to create: 80 legal minimum monthly wages (lmmw), 150 lmmw and 180 lmmw if a business is expected to generate up to 3 jobs, up to 5 jobs and 6 or more jobs respectively. FE can approve up to 100% of the amount requested in a business plan.

4.1.2 Assessment & Approval of Funds

Entrepreneurs are required to fill and update an online survey through with information related with their business plan is provided. Main aspects include: markets, operations, organization, finances, operational plan, potential impact and team. Feedback is provided to entrepreneurs via a virtual platform. Entrepreneurs’ credit assessment is based on the information they present in the business plan. Business plan quality might be related to the assistance received from the entrepreneurial unit or to an entrepreneur’s prior business knowledge.

Evaluators score each aspect following a guide pre-defined by SENA; this results in an overall score for each business plan; this might take up to 30 days. The feedback provided to entrepreneurs does not include such score; instead it presents qualitative descriptions of those aspects that need to be further described or improved; entrepreneurs then have up to 5 days to reply to such feedback. Evaluators present the outcome and recommendations to a technical commission and an administrative act commences to determine the assignment of funds. Once a decision is made regarding the allocation of funds, narratives from evaluators are used to justify what aspects were the most influential in terms of funds allocation. It is important to note that the criteria used to reject or accept a business plan does not change among calls. Assessment teams might change, however, depending on the specificity of calls. FONADE (*Fondo Financiero de Proyectos de Desarrollo*), Financial Fund for Development Projects, is a third party that selects, contracts and coordinates evaluation teams for each call.

4.1.3 Business Plan Execution

Entrepreneurs must execute their business plans within a period of 12 to 18 months. Entrepreneurial units present bi-monthly and annual reports to FE; three management indicators and two impact indicators are assessed per business plan. They visit new businesses twice a year to track the use of resources as planned. If resources are not deployed according to the agreed plan, entrepreneurs are required to refund them to FE according to the assessment criteria of evaluators; this is identified as a complex process to complete with a governmental agency.

4.2 External factors

This section defines and presents descriptive statistics results for each external factor. Ten variables (external factors) were obtained for each business plan: location, industry, applicant institution, cohort per call, amount requested and available budget (Figure 3). These variables also represent features of the FE funding process presented in Figure 3. Each of them is discussed further below.

Figure 3: External factors

Variable	Description	Values
Applicant institution	Agency through which business plans were presented to SENA	<ul style="list-style-type: none"> • Educational institutions & chambers of commerce • Incubators • SENA
Location ₁	Defined according to 3 main capital cities, other capital cities and non-capital cities	• Bogota; Medellín; Barranquilla; Other capital cities; towns/villages
Location ₂	Defined according to Colombian natural regions.	5 natural regions
Location ₃	Defined according to the Colombian socio-political system	29 departments
Industry ₁	Defined according to GDP sectors identified by the Colombian government	9 categories
Industry ₂	Defined according to broad categories of GDP	4 categories
Industry ₃	Described in current National Plan of Colombia, according to products/services offered by each industry	12 categories
Timing	Ordinal identification of cohorts within each call	From 1 up to 4 cohorts per call
Amount requested	$\frac{\text{Requested amount in COP}}{\text{Monthly minimum wage in Colombia}_i}$ Where i=cohort year	[20,180] monthly minimum Colombian wages, organised in 8 categories
Available budget	$\frac{(\text{Budget}_n - \sum_{j=1}^{i-1} \text{Spent budget}_j)}{\text{Budget}_n} \times 100\%$ Where n= call, i=cohort	[29,100] organised in 9 categories

The variable *applicant institution* was categorized into three groups. Entrepreneurial units at educational institutions and chambers of commerce were included in a single category because neither of them exists primarily to provide assistance on business plan design and formulation. Incubators directly assist entrepreneurs and help them in transforming new ideas into new businesses through business plan generation and development. Entrepreneurial units at SENA directly engage with entrepreneurs and are specifically assessed in terms of business plan submissions to FE.

A descriptive analysis of the variable *applicant institution* shows that out of 1,728 business plans, the minority of them were registered at incubators (9) and educational institutions and

chambers of commerce (58). In contrast, the majority (1,661), corresponding to 96.1% of the business plans was registered at SENA entrepreneurial units, where, according to an expert from SENA, “anyone that fulfils requirements is eligible to present”⁴¹ a business plan. Different categories of institutions provide different levels of mediation between the entrepreneur and regional ecosystems in Colombia that can access FE funding. It is evident that for the dataset under consideration, the central funding agency was preferred by entrepreneurs to access seed capital in contrast with other actors. This could be related with entrepreneurs relating mainly with SENA entrepreneurial units given their *raison d'être* and performance based on business plans presented to FE.

A frequency analysis of the variables *location₁* and *location₂* is useful to map out the business ideas generated within the country for the dataset under review. Most of the business plans (85.9%) were presented in places different to Bogota, Medellin and Barranquilla (the three major cities of Colombia); 52.4% of the business plans were presented in the central Andes Region and only 7.7% were presented in the remote Amazon Region and Plains. These results might be related to the distribution and structure of SENA within the country. Regional SENA centres are unevenly distributed: 8 in the Caribbean Region, 11 in the Andes Region, 4 in the Pacific Region, 5 in the Amazon Region and 5 in the Plains Region. Furthermore, each regional centre has a different number and types of training centres: 115 in total, from which 65 are located in the Andes Region in contrast with 5 and 6 training centres in the Amazon and Plains respectively. Specialism within training centres is defined according to technical and technological profiles required by local industries and hence some regions specialize in services and tourism while others might emphasize more on agro industry, for instance. This further suggests that the distribution of business plans per *location₂* reflects the dynamics of regional economies and the assistance provided by regional entrepreneurial units.

Further examination of the frequency of business plans by *location₃* highlights the concentration of seed funding applications in specific departments. Two departments account for more than 25% of the business plans presented: Cundinamarca (15.5 %), which includes Bogota with 172 business plans (almost 10% of the sample) and Valle del Cauca (10.8%), which includes Cali with 69 business plans (almost 4% of the sample). Additionally, 5 departments represent almost half of the sample (49.3%): Cundinamarca, Valle del Cauca, Huila, Cauca and Nariño. Two of them are in the Andes Region (24.9% of the sample) and the other three departments are in the Pacific Region (24.4% of the sample). This suggests that entrepreneurial units of these five departments are more active than the other applicant institutions. A comparison of the relative participation per department (2/4) would suggest that based on only on FE data, Valle del Cauca is the mostly active department relative to its population whereas Antioquia is the least active. However, it is important to note that in the latter case this might be the result of the existence of various alternative seed capital funds different to FE which have been in place since the past decade.

In order to have a broader perspective of the representativeness of the economic sectors represented by the business plans of the sample, Figure 4 presents a frequency of the business plans for variables *industry₁* and *industry₂*. Using these two variables to analyse results is more useful than using variable *industry₃* because it facilitates international comparisons in the future. *Industry₃* will be kept, however, as it considers the specificity of the country under analysis. Results show that main Colombian industries are represented in the sample; in particular, “Agriculture, hunting and fishing” and “Manufacturing” represent more than half of the

⁴¹Citation from interview to expert at FE, Andres Felipe Quintero.

business plans presented to FE. This is coherent with the classification of Colombia as a factor driven economy, with its main source of competitiveness being the raw exploitation of its natural resources and low-cost labour. Colombia is a developing country with an estimated nominal GDP per capita in 2014 of \$8,150 (£2.54) and a HDI in 2013 of 0.719. Even though the Colombian economy has grown over the past decade, the percentage change of GDP in 2014 is based on agriculture (4.5%) and services (5.3%) with human resource indicators relatively weak (only 10% of persons employed in S&T occupations; PISA scores below the OECD median)⁴².

Figure 4: Frequency of Business Plans per Industry^{1,2}

<i>Industry₂</i>	<i>Industry₁</i>	
Agriculture (36.8%)	36.6%	Agriculture, hunting and fishing
	0.2%	Mining and quarrying
Manufacturing (30.5%)	30.0%	Manufacturing
	0.5%	Electricity, gas and water supply
Construction (2.4%)	2.4%	Construction
Services (30.3%)	10.1%	Commerce, restaurants and hotels
	1.6%	Transport, storage and communication
	9.3%	Financial, insurance, real estate and business services
	9.3%	Social, community and personal services

The three final variables shown earlier in Figure 3, *timing*, *amount requested* and *available budget*, can be described as “process” variables directly related to the funding process itself. All of them depend on guidelines defined by FE in terms of application deadlines (*timing*), funds application limits (*amount requested*) and seed capital resources available for a particular cohort (*available budget*). Modes were: deadline 3, 180 Immw and 45% for *timing*, *amount requested* and *available budget* respectively. Therefore most entrepreneurs submitted their business plans within the third deadline of calls, applied to the maximum limit allowed by FE; more than half of the budget was available by time of application in most of the cases. These results suggest that in general entrepreneurs were positive and willing to obtain as much funding as they could and that in general funds were available from FE for entrepreneurs to apply for seed capital.

4.3 External Factors Affecting Funding Decision

This section presents results for information value per external factor presented in Figure 3. Figures related with independence of each external factor and the fund granting decisions are presented in column (1) in Figure 5. Information value of each variable is presented in columns (2) and (3) in Figure 5.

⁴²<http://www.oecd.org/sti/outlook/e-outlook/sticountryprofiles/colombia.htm>

Figure 5: External factors affecting funding decision

VARIABLE	(1)	(2)	(3)
	INDEPENDENT?	IV	STRENGTH
Location ₁	NO	0,05	Very weak
Location ₂	NO	0,10	Weak
Location ₃	NO	0,32	Strong
Industry ₁	NO	0,11	Medium
Industry ₂	NO	0,09	Weak
Industry ₃	NO	0,25	Medium
Applicant institution	YES	0,02	Very weak
Timing	YES	0,01	Uncorrelated
Amount requested	NO	0,06	Weak
Available budget	YES	0,03	Very weak

Except for *applicant institution*, *timing* and *available budget*, the funding granting decision is not independent of other external factors. These three variables are expected to have low information values, as detailed below.

Location is a relevant external factor for fund granting decisions. This is a result of Colombia being a country with high cultural, institutional and natural biodiversity. Access to social, financial and natural resources are likely to display high variation amongst the regions, cities and departments. For instance, Manizales is a capital city with a strong entrepreneurial ecosystem supported by the local government and access to a wide variety of resources from the Andes Region. In contrast, Leticia, another capital city in the Amazon Region may have access to abundant resources but lacks institutional development and integrated activities required to constitute a productive entrepreneurial ecosystem, such as those found in Medellin and Bogota. The predictive power of *location* (1,2,3) was very weak, weak and strong, depending on the classification used: i.e. cities, natural regions and departments respectively. This makes sense, as entrepreneurial activities do not occur only in capital cities and regions are broad categories that include several departments, which results in a reduced discrimination power. This suggests that department (*location*₃) should be used as a *location* variable because it is more useful than the other two alternatives to discriminate accepts from rejects. The predictive power of *industry* is reduced from medium to weak when a broader classification of industries is used (agriculture, industry –manufacturing and construction- and services). This makes sense as collapsed categories include mixed industries that do not necessarily reflect the specificity of a business plan in terms of industry and hence the variable is not very useful to discriminate accepts and rejects. Hence it is advised to use *industry*_{1,3} at a national level. For international comparison purposes, common sense would suggest using *industry*₂ at the expense of losing part of the predictive power of the variable.

Application institution has a very weak predictive power; hence it does not make a difference for fund granting purposes. This suggests that education institutions, chambers of commerce,

incubators and SENA provide similar guidance to entrepreneurs when applying for funds. We discussed earlier that the role of these three types of institutions is different; therefore one would expect that the time devoted by incubators and SENA entrepreneurial units could have a positive impact on obtaining funds; this was not the case. An alternative interpretation of these results could be that almost 97% of the business plans in the dataset were presented at SENA entrepreneurial units. More data on business plans from other types of institutions would shed further light on the role of education institutions, chambers of commerce, incubators and other subsidiary institutions regarding business plan assistance. While a respondent stated: “*there are institutions that are good articulators, such as the Ministry of Work and the Chamber of Commerce (nationally and locally)*”, these sources of funding support appear underutilised.

In terms of “process” variables, *timing*, *amount requested* and *available budget* did not present medium or strong predictive power. *Timing* does not have an effect on funds granted, i.e. it does not make a difference if entrepreneurs apply for funding earlier or later within each call, where applicable. A weak predictive power of *amount requested* and a very weak predictive power of *available budget* suggest that the Government budget to support this programme is not an issue, in terms of affecting the likelihood of a business plan being granted funds. Budgets and specific funding calls are defined in advance, once the agency disseminates application details per call. Therefore, process variables do not seem to impact significantly the granting decision, which suggests that decisions are mostly based on other external factors and obviously on internal factors presented in the business plan.

5 Conclusions

To our knowledge, this is the first study that has attempted to analyse the decision-making process and the effect of external factors on public seed funding decisions, based on submitted business plans. The empirical data analysis presented in this paper is the first stage in designing an entrepreneurial scorecard that could be used to formalise and assist the decision process. At this initial stage we employed mixed methods, which included quantitative methods (e.g. exploratory and inferential statistics, bivariate analysis) and qualitative methods (e.g. interviews, open and axial coding).

We suggest the value of the study is enhanced by the setting in which it was performed. The national agency provides a unique opportunity for examining business plans from across the country; allowing assessment of newly formed businesses about to embark on their entrepreneurial journeys. One respondent suggests that the national funding programme is making a difference; “*Positive results have been obtained since using this financial tool in 2005. More than 3,300 seed capital operations have been approved. Even though it is true that only around 1.400 businesses have survived, sustainability is a shared responsibility with all the country and the entrepreneurial ecosystem.*”

Our study findings carry several policy implications. First, we find that entrepreneurs across the country appear to receive similar guidance when applying for funds. This suggests that guidelines and processes for administering the funding programme in entrepreneurial units at SENA are consistently applied across the country and that this funding is mostly used by citizens that have access to this type of institutions. Second, findings identifying strong predictive power of *location by department* (versus weak predictive power of location by city or region) suggest the importance of institutional development that constitutes a productive and supportive local entrepreneurial ecosystem. While SENA entrepreneurial units may provide similar assistance to apply across the country, entrepreneurs in some peripheral areas may be

disadvantaged in establishing a credible business opportunity because of the nature of the local supportive environment.

The paper makes several contributions towards the foundations to design entrepreneurial scorecards by establishing how two different variables influence public funding decisions: department (*location*₃) and industry. Findings reveal weak to moderate predictive power of *industry* influencing the funding decision. Although one explanation relates to the nation-wide extent of the funding programme and aggregation of a number of industry-specific funding calls within the data set, we also identify the need for a more narrowly defined industry classification system to discriminate between accepted and rejected business plans. *Process variables* do not seem to impact significantly the granting decision; this suggests the absence of process biases and that decisions are mostly based on other variables directly related with the business plan itself (internal factors). We conclude that these factors do not appear to constrain access to public seed funds.

Future research will focus on *internal factors* related to information in the business plan, such as characteristics or descriptions of the market, product or service, financial model, management team, etc., to determine what particular information in the business plan may be more or less critical in influencing the funding decision. One line of inquiry is to determine the extent to which educational background endowments possessed by entrepreneurs will predispose them to more favourable assessment by funders, as identified with bank loans (e.g. Parker and van Praag, 2006). Another line of inquiry is to determine how information on the market and on potential competitiveness and entry barriers (as explained in the business plan as well as perceived by the fund evaluator) influences the funding decision (e.g. Cassar, 2004). Indeed, the subjective nature of evaluating business plans may be a factor in funding decisions. Further study of evaluator scores and scoring comments may reveal how scores vary between different evaluators and across funding calls and identify the level of subjective versus objective attributes in the scoring process.

Further research might also determine survival rates of businesses securing public seed funding from this national call as well as levels of growth and profitability that identify a “leveraging” effect of public seed funds. While we must be cautious about data that may support a “picking winners” policy, such insights may identify where improvements can be made in supporting the business planning process leading up to formal submission of the business plan for funding consideration. Finally, we expect that further insights and policy implications will emerge as we further examine the data and engage in more detailed analysis of information available in the business plans.

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Appendix

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**The Impact of International Potentials, Entrepreneurial Motivations and Firm Stages
on New Venture Internationalisation**

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The Impact of International Potentials, Entrepreneurial Motivations and Firm Stages on New Venture Internationalisation

ABSTRACT

Past research on early internationalising firms often examined factors and motivations potentially influencing internationalisation activities separately. The purpose of this paper was to investigate a set of indicators and their interplay with each other. Firstly, the impact of (a) international potential in the form of the depth and diversity of international experience and network contacts was investigated. Secondly, it was examined to what extent (b) motivational factors and (c) firm stages affect the relationship between international potential and internationalisation activities. This paper used longitudinal data from the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE). Results suggest that the international potential of a new venture as a whole is a significant determinant of subsequent internationalisation activities. However, having a diverse international experience from a variety of foreign countries appears to be more beneficial than a long-lasting experience from only a limited number of foreign countries. Furthermore, analyses showed that the interplay of high growth ambitions and the depth of international experience positively affect internationalisation activities. Opportunity or necessity driven entrepreneurship, however, neither exaggerate nor weaken the positive relationship between international potentials and internationalisation activities. Similarly, no moderation by firm stages was found.

INTRODUCTION

For more than two decades, particular interest has grown in the emerging field of International Entrepreneurship, reflecting the fusion between entrepreneurship and international business research (McDougall & Oviatt, 2000). Interesting questions have emerged as to why some new ventures go international very early, while others do not follow a rapid international path. Previous research has shown that capabilities and a global mindset of entrepreneurs may foster an early entry into foreign markets (Acedo & Jones, 2007; McDougall, Shane, & Oviatt, 1994). In addition, entrepreneurial motivations may be critical for internationalisation activities of a new venture (Santos & García, 2011; Shane, Locke, & Collins, 2003). Also, the developing firm stages of a new venture are an important aspect (Jones, 2001; Keupp & Gassmann, 2009).

Past research often examined factors and motivations potentially influencing internationalisation activities separately. Those studies did not investigate the interplay of potentially beneficial factors, such as the influence of entrepreneurial motivations on the utilisation of knowledge and abilities (Shane et al., 2003). This research aims to fill this gap by examining a set of indicators and their interplay with each other. The focus is on four key constructs: International potential, entrepreneurial motivation, firm stages and internationalisation activities.

LITERATURE REVIEW AND HYPOTHESES

Traditionally, international business scholars used a stage-based view for examining the internationalisation process (Johanson & Vahlne, 1977); e.g. the Uppsala model. This model proposes that firms in the first instance accumulate experiences in their domestic market and then gradually enter foreign markets (Johanson & Vahlne, 1977). A different type of venture has been found not to follow this stage-based path (McDougall, 1989). Therefore, stage-based frameworks turned out not be sufficient for describing these ventures (McDougall et al., 1994). Rather, Oviatt and McDougall (1994) theorised the International New Ventures (INV) framework: An INV is “a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries”

(Oviatt & McDougall, 1994, p. 49). McDougall et al. (1994) argue that the founders of INVs are especially alert to internationalisation opportunities due to their knowledge, background and networks.

Potential factors influencing internationalisation activities

For early internationalising activities, knowledge from international experience and network contacts have been found to play a major role (Karra, Phillips, & Tracey, 2008). Thereby, entrepreneurs are likely to have a higher propensity to internationalise their venture and they may be better able to overcome barriers to internationalisation (Drori, Honig, & Wright, 2009; Madsen & Servais, 1997). These factors can be understood as the international potential to engage in international activities.

Prior knowledge

Founders or managers of entrepreneurial firms who have a larger stock of prior international knowledge are more likely to pursue opportunities for internationalisation activities earlier and implement them more rapidly (Oviatt & McDougall, 2005). Uncertainty associated with operating in foreign markets is decreased (Autio, Sapienza, & Almeida, 2000). Prior knowledge related to internationalisation activities is sourced from international experience among the venture team – due to work, education or personal experience (Oviatt & McDougall, 2005; Shane & Venkataraman, 2000). International experience is conceptualised as a multidimensional construct (Clarke, Tamaschke, & Liesch, 2013). It may be split into two dimensions – the depth and the diversity of the international experience. That is, the amount of time an individual has spent in a country abroad and the number of countries an individual visited (Leonidou, Katsikeas, & Piercy, 1998). By having spent a certain time abroad an entrepreneur was exposed to the foreign culture and thereby able to learn about the market characteristics (Leonidou et al., 1998). Additionally, having experiences from a diverse number of countries may equip entrepreneurs with an international outlook (Hutchinson, Quinn, & Alexander, 2006). Therefore, the following hypotheses are stated:

Hypothesis 1a: Higher levels of depth of international experience among the new venture team positively influence the level of internationalisation activities.

Hypothesis 1b: Higher levels of diversity of international experience among the new venture team positively influence the level of internationalisation activities.

Networks

Networks in which INVs are engaged in can facilitate a rapid internationalisation process (Oviatt & McDougall, 1994). Networks can enable the access to international opportunities and overcome liabilities of foreignness and newness (Arenius, 2002). Both the networks of the firm and the networks of the founders have been found to explain the international development of new ventures (Rialp, Rialp, & Knight, 2005). Arenius (2002) states that the availability of international networks equips firms with a competitive advantage for internationalisation activities. Therefore, the following hypothesis is proposed:

Hypothesis 1c: Enhanced networks among new venture teams positively influence the level of internationalisation activities

Entrepreneurial motivation

Motivation is crucial for the entrepreneurial process (Shane et al., 2003) and plays a critical role for the internationalisation behaviour of a new venture (Acedo & Jones, 2007; Santos & García, 2011). In the entrepreneurship literature, differences between opportunity and necessity motivations are a major concept (Giacomin, Janssen, Guyot, & Lohest, 2011). Furthermore, an

entrepreneur may be motivated by the ambition to achieve growth and profit (Hessels, Van Gelderen, & Thurik, 2008).

Opportunity and necessity motivation

According to Reynolds, Bygrave, Autio, Cox, and Hay (2002) there are two major motivations why individuals engage in an entrepreneurial activity: “They perceive a business opportunity” or “they see entrepreneurship as their last resort” (p. 16). A common example for the latter motivation – necessity – is unemployment (Verheul, Thurik, Hessels, & van der Zwan, 2010). The type of motivation has been found to influence the development of the new venture. Previous research provides evidence that having started a business from an opportunity motivation is related to higher export ambitions (Reynolds et al., 2002). Analysis of Global Entrepreneurship Monitor (GEM) data suggests that among entrepreneurs who export, the vast majority were opportunity driven (Reynolds et al., 2002). Hence, having started a business from an opportunity motivation is likely to have a positive influence on internationalisation activities while necessity driven entrepreneurship may have a negative influence. Therefore, the following hypothesis is stated:

Hypothesis 2a: Necessity motivation among new venture teams negatively influences the level of internationalisation activities

Growth orientation

Delmar and Wiklund (2008) define the growth motivation of a small business owner “as the aspiration to expand the business” (p. 438). Delmar and Wiklund (2008) suggest that growth motivation has a positive effect on actual firm growth. As Hessels and van Stel (2011) summarise, an internationalisation activity in the form of exporting goods and services is related to business growth. The aspiration to achieve growth may be implemented by an internationalisation activity. Therefore, the following hypothesis is proposed:

Hypothesis 2b: A high growth orientation among new venture teams positively influences the level of internationalisation activities

Buffering role of entrepreneurial motivation

Examining opportunity, necessity and growth motivations suggests that these motivations are likely to affect the relationship between international potentials and internationalisation activities. Locke and Latham (2004) state that motivation can affect “how and to what extent they [people] utilize their skills and abilities” (p. 388). Thus, the utilisation of one’s knowledge when undertaking an activity may be influenced by motivation (Locke & Latham, 2004). This interaction is incorporated in components of the goal setting theory. Basically, the theory examines why some individuals perform better on work tasks than others do (Latham & Locke, 1991). As outlined by Latham and Locke (1991) “if they are equal in ability and knowledge, then the cause must be motivational” (p. 213). Transferring this to the context of early internationalising new ventures, it can be assumed that it affects how ability and knowledge are implemented for a potential internationalisation activity.

Shane et al. (2003) state that the change of individuals from one stage of the entrepreneurial process to another is influenced by motivations. According to Zahra, Korri, and Yu (2005) motivations can reveal linkages between entrepreneurs and their choices on internationalisation activities. Hence, motivation is likely to influence the relationship between potential factors facilitating an early internationalisation of the entrepreneurial firm and the actual internationalisation activity. Therefore, the following hypotheses are stated:

Hypothesis 3a: Growth orientation moderates the relationship between the depth of international experience and the level of internationalisation activities, such that the

positive effects of the depth of international experience on internationalisation activities are exaggerated if firms are driven by a high growth orientation.

Hypothesis 3b: Growth orientation moderates the relationship between the diversity of international experience and the level of internationalisation activities, such that the positive effects of the diversity of international experience on internationalisation activities are exaggerated if firms are driven by a high growth orientation.

Hypothesis 3c: Growth orientation moderates the relationship between network contacts and the level of internationalisation activities, such that the positive effects of network contacts on internationalisation activities are exaggerated if firms are driven by a high growth orientation.

Hypothesis 3d: Necessity motivation moderates the relationship between the depth of international experience and the level of internationalisation activities, such that the positive effects of the depth of international experience on internationalisation activities are buffered if firms are driven by necessity motivation.

Hypothesis 3e: Necessity motivation moderates the relationship between the diversity of international experience and the level of internationalisation activities, such that the positive effects of the diversity of international experience on internationalisation activities are buffered if firms are driven by necessity motivation.

Hypothesis 3f: Necessity motivation moderates the relationship between network contacts and the level of internationalisation activities, such that the positive effects of network contacts on internationalisation activities are buffered if firms are driven by necessity motivation.

Firm stages

Entrepreneurship does not occur at a single point in time; it is rather a process and a sequence of events and activities (McMullen & Dimov, 2013). Clearly, the firm stage changes over time and internationalisation activities are a process interrelated with the development of the entrepreneurial firm (Keupp & Gassmann, 2009). Internationalisation processes are often initiated during the gestation process of the firm (Oviatt & McDougall, 2005). Therefore, the very early years of an emerging firm should be explored when examining relationships between firm stages and internationalisation activities.

Nascent and young firms

Nascent ventures are in the process of gestation and incubation (Reynolds & Miller, 1992). The focus on nascent ventures is crucial in research on early internationalising firms. These firms enter foreign markets frequently at inception (Oviatt & McDougall, 1994). Hence, in many cases the process of internationalisation has been initiated during gestation. In contrast to nascent firms, young firms are formally established and operate in the market. After an early international commitment, international new ventures tend to increase their international activities over time (Sleuwaegen & Onkelinx, 2014). Therefore, the following hypothesis is stated:

Hypothesis 4a: Young firms in contrast to nascent firms exhibit higher levels of internationalisation activities.

Impact of firm stages on the relationship between potential and activities

Following a process view on new venture internationalisation, it is consequential that firm stages are likely to have an impact on internationalisation activities (Jones & Coviello, 2005).

Internationalisation is interrelated with the development of the entrepreneurial firm (Keupp & Gassmann, 2009). Knowledge enhances over time, in particular if it can be based on a pre-existing knowledge stock (Shepherd & DeTienne, 2005). This, in turn, may have further positive effects on new venture internationalisation. Hence, during the life-cycle of the firm, entrepreneurs can gain additional knowledge which may foster internationalisation activities.

Also networks change over time (Coviello, 2006; Oviatt & McDougall, 2005). During the internationalisation process, new ventures increase their networks in size and range by building on existing social capital (Arenius, 2002; Coviello, 2006). As the venture develops from a nascent to a young firm, the factors facilitating internationalisation activities are accumulated and enhanced during the firm's life-cycle. Therefore, the following hypotheses are proposed:

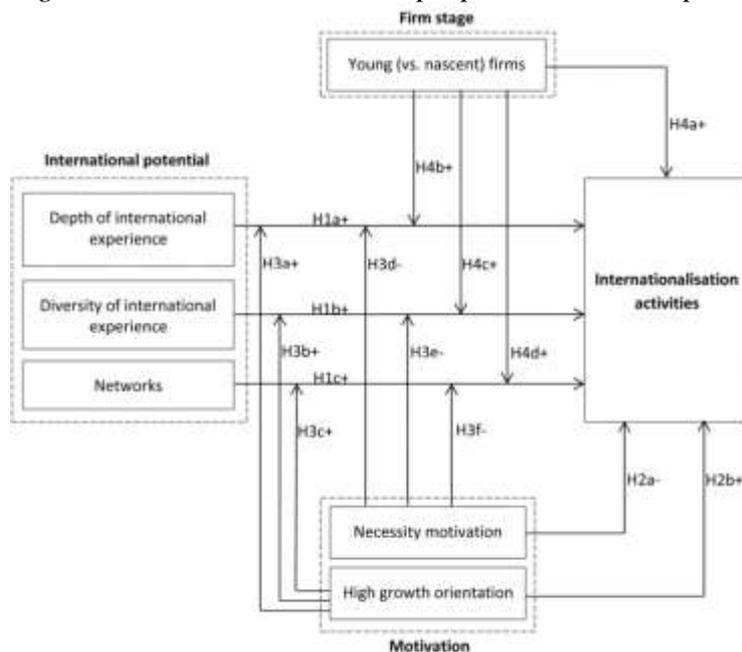
Hypothesis 4b: Firm stages moderate the relationship between the depth of international experience and the level of internationalisation activities, in that way that the positive effects of the depth of international experience on internationalisation activities are more distinct when entrepreneurial firms are classified as young firms.

Hypothesis 4c: Firm stages moderate the relationship between the diversity of international experience and the level of internationalisation activities, in that way that the positive effects of the diversity of international experience on internationalisation activities are more distinct when entrepreneurial firms are classified as young firms.

Hypothesis 4d: Firm stages moderate the relationship between network contacts and the level of internationalisation activities, in that way that the positive effects of network contacts on internationalisation activities are more distinct when entrepreneurial firms are classified as young firms.

The proposed relationships are summarised in the research model shown in figure 1.

Figure 1: Research model with proposed relationships



METHODOLOGY

Research design, data and sample

This study adopts a process view to examine potential determinants of internationalisation activities and the actual level of internationalisation. Hence, data is needed that has been collected over a period of years in order to investigate potential determinants at one point in time, and the outcome at a subsequent point in time. Furthermore, attempting to assess a process with a cross-sectional design would be susceptible to retrospective and hindsight bias (Davidsson et al., 2004). Hence, longitudinal data is required which comprises nascent and young firms. Therefore, this research uses data from the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) (Davidsson, Steffens, & Gordon, 2008). This study draws a random sample of nascent firms ($n=625$) and young firms ($n=561$) from the CAUSEE dataset. Entrepreneurs participating in CAUSEE were interviewed every 12 months for four years (Davidsson, Steffens, & Gordon, 2011). For testing the hypotheses, data from the first three waves is used. The independent variables are represented by data from wave 1. The dependent variable is represented by the subsequent wave 2. Data from wave 3 on internationalisation activities is used as a robustness test.

Variables and measures

Depth of international experience is measured by the total number of years members of the venture team spent in a country other than Australia. The number of years has been used in previous studies as an indicator for international experience (Kundu & Katz, 2003).

Diversity of international experience is measured as the accumulated number of countries other than Australia in which members of the venture team worked or studied for a period of three months or more. Previous studies suggest that not only the time spent abroad but also the diversity plays a role for internationalisation activities (Hutchinson et al., 2006; Leonidou et al., 1998).

Networks are measured as a competitive advantage relative to other firms. Respondents were asked to self-assess – compared to other firms – their ability (1) to use the firm’s networks to influence the firm’s environment, (2) to use the firm’s network to access useful knowledge and (3) to use personal networks for business purposes. Each question was answered on a 5-point-Likert-type-scale. The network variable for this study is captured by a composite score comprising these three items. Internal consistency reliability analysis resulted in a very good Cronbach’s alpha coefficient of .80 ($n=1076$) for the construct (Hair et al., 2011).

Necessity versus opportunity entrepreneurship. CAUSEE data captures the difference between opportunity and necessity motivation with the help of the following question: “What is truer for you: Are you involved in this business to take advantage of a business opportunity or because you have no better choices for work?” This variable is dichotomous and coded as 1=necessity entrepreneurship and 0=opportunity entrepreneurship.

Growth orientation is measured by the preference for the future of operating the business to be as large as possible as opposed to operating a smaller manageable business. The variable is dichotomous representing either a large growth orientation (coded as 1) or the absence of a large growth orientation (coded as 0).

Nascent versus young firm. Nascent firms are classified in the CAUSEE data by a series of questions mostly harmonised with an established operationalisation in the Panel Study of Entrepreneurial Dynamics (PSED) (Davidsson et al., 2008). This variable is dichotomous reflecting whether the venture represents a nascent or young firm. It is coded as 1=young firm and 0=nascent firm.

Internationalisation activities. The dependent variable in this study is the level of internationalisation activities. As a proxy for internationalisation activities the measure of

international revenue as a percentage of total revenue is widely used in the literature (Javalgi & Grossman, 2014). However, Sullivan (1994) suggests not to use only a single item or aspect to measure internationalisation of a firm. Furthermore, this study focusses on the level of internationalisation activities and not the magnitude of individual indicators. Therefore, this study uses a formative measurement score in order to represent the level of internationalisation activities. It includes whether each of the following international activities apply or not: (1) Export via an Australian intermediary, (2) export to the customer directly, (3) export via an international office, (4) indirect exporting via Australian customers, (5) export via an international mediator, (6) personal exchange of ideas and information with colleagues abroad, (7) exchange of ideas and information with colleagues abroad via phone, email or internet, (8) import of goods/services, (9) collection of written or electronic information from abroad, (10) selling internationally, (11) selling to international visitors and (12) international licensing agreement.

Control variables. In terms of internationalisation activities, there are considerable differences between service and non-service firms (Lewis & Minchev, 2001). Therefore, this study controls whether a new venture is classified as being either a service or a product-based firm. Furthermore, this study controls for brick and mortar businesses in contrast to e-businesses. E-business activities may facilitate internationalisation activities in contrast to sole brick and mortar competitors due to wider market opportunities (Davis & Harveston, 2000). Also, several studies have shown that the industry impacts on the propensity to internationalise (Rialp et al., 2005). The CAUSEE dataset captures 17 industry sectors. This study aims to investigate the influence of international experiences in particular. Therefore, the analysis accounts for possible effects of higher education in general. As a proxy it uses the existence of a university degree in the venture team. Accounting for socio-demographic differences, this study controls for the ethnicity of the venture team. Entrepreneurs with a migration history may be able to use their background as an advantage for operating international ventures (Drori et al., 2009). Finally, this study controls for the gender composition of the venture team. Previous studies found differences between male and female entrepreneurship, for example in regards to size and growth of the business (Fischer, Reuber, & Dyke, 1993).

Data analysis

For testing the hypotheses, two-way moderated multiple regression analysis is applied, since the hypothesised moderators may influence the relationship between the independent and the dependent variable (Sharma, Durand, & Gur-Arie, 1981). Three moderated regression models are constructed testing for interaction effects of necessity versus opportunity motivation, growth orientation, and nascent versus young firms respectively.

RESULTS

Overall, the variables do not show high correlations with each other. Only the outcome variable internationalisation activity drawn from wave 2 is strongly correlated with the corresponding outcome variable from wave 3 ($r=.60, p<.01$). However, this was expected since it measures the same construct just at different points in time. The remaining variables demonstrate low to moderate correlations (Cohen, 1988). This indicates that multicollinearity is not a serious issue in the analyses (Hair et al., 2011).

Table 1: Results from the two-way moderated regression analyses

Predictors	Internationalisation Wave 2 β	Internationalisation Wave 3 β
<i>Covariates</i>		
Brick & Mortar Venture	-.21***	-.26***
Ethnicity of venture team (Non-European)	.09*	.13**
Gender Composition of venture team (male)	.05	.04
Services (or Product)	-.11*	-.07
University degree in venture team	.03	.06
Industry: Agriculture	-.05	-.07
Industry: Business Consulting	-.01	-.02
Industry: Communications	.05	-.05
Industry: Consumer Services	-.13*	-.11*
Industry: Construction	-.16***	-.17**
Industry: Finance	-.08†	-.16**
Industry: Health, Education, Social	-.05	-.11†
Industry: Hospitality	-.07†	-.12*
Industry: Insurance	.06	.02
Industry: Manufacturing	-.05	-.06
Industry: Mining	-.02	-.04
Industry: Real Estate	-.04	-.05
Industry: Retail	-.07	-.15*
Industry: Transport	-.07†	-.08†
Industry: Utilities	-.03	-.06
Industry: Wholesale	-.01	-.04
Adj. R ²	.10***	.12***
<i>Main Effects</i>		
Networks	.07†	.11**
International Experience Depth	.03	.07
International Experience Diversity	.22***	.14**
ΔR^2	.06***	.05***
Model 1: Interaction with Growth Orientation		
<i>Moderator</i>		
Growth Orientation	.06†	.04
ΔR^2	.00†	.00
<i>Two-way interactions</i>		
Networks * Growth Orientation	-.03	-.03
Int. Experience Depth * Growth Orientation	.11*	.14*
Int. Experience Diversity * Growth Orientation	-.03	-.07
ΔR^2	.01	.01†
Model 2: Interaction with Necessity Driven Entrepreneurship		
<i>Moderator</i>		
Necessity Driven Entrepreneurship	-.04	.01
ΔR^2	.00	.00
<i>Two-way interactions</i>		
Networks * Necessity Entrepreneurship	-.01	.06
Int. Experience Depth * Necessity Entrepreneurship	-.01	-.06
Int. Experience Diversity * Necessity Entrepreneurship	.07	.10 †
ΔR^2	.00	.01
Model 3: Interaction with Young firm		
<i>Moderator</i>		
Young firm	.07†	.03
ΔR^2	.00	.00
<i>Two-way interactions</i>		
Networks * Young firm	.04	-.02
Int. Experience Depth * Young firm	-.05	-.06
Int. Experience Diversity * Young firm	.02	.08
ΔR^2	.00	.00

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Multivariate analysis

Results for the three moderated hierarchical multiple regression models for hypotheses testing are shown in table 1.

Main effects

Entry of the international potential as a set significantly improves the prediction of internationalisation activities at the time of wave 2 (R^2 Ch. = .06, $F(3, 659) = 15.40$, $p < .001$). As hypothesised (H1b) the diversity of international experience is positively related to internationalisation activities at wave 2 ($\beta = .22$, $p < .001$). Networks have a marginally significant positive relationship with internationalisation activities at the time of wave 2 ($\beta = .07$, $p < .10$) and a significant relationship at wave 3 ($\beta = .11$, $p < .01$), weakly supporting Hypothesis 1c. No support, however, can be found for Hypothesis 1a proposing that the depth of international experience predicts internationalisation activities. The robustness test with data for internationalisation activities drawn from wave 3 shows a similar pattern.

Entrepreneurial motivation

Growth orientation is marginally significantly related to subsequent internationalisation activities in wave 2 ($\beta = .06$, $p < .10$), weakly supporting Hypothesis 2b. No significant direct effect can be found for necessity driven entrepreneurship, even though the tendency is negative ($\beta = -.04$, *n.s.*). For internationalisation activities at the time of wave 3, as with the dependent variable from wave 2, necessity driven entrepreneurship is not significant. Also, growth orientation does not have a significant direct effect any longer.

Firm stages

The analysis indicates that there is a marginal significant positive relationship between young firm and internationalisation activities ($\beta = .07$, $p < .10$), weakly supporting Hypothesis 4a. The significant direct effect, however, disappears when a robustness test is conducted with the dependent variable drawn from wave 3 of the data.

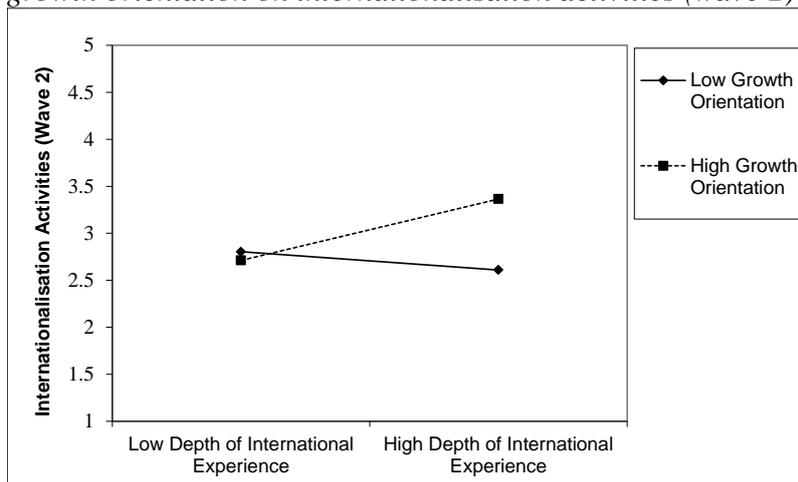
Interaction effects

Tests reveal a significant positive interaction between the depth of international experience and growth orientation ($\beta = .11$, $p < .05$) in predicting internationalisation activities from wave 2. Also the robustness test with internationalisation activities from wave 3 supports the interaction effect ($\beta = .14$, $p < .05$). The two other proposed interaction effects for growth orientation, however, are not significant.

In order to further examine the nature of the interaction effect, simple slopes analyses are conducted. Figure 2 shows the slopes for the outcome variable drawn from wave 2. Results reveal that the effects of a high depth of international experience on internationalisation activities are more marked for those new venture teams which have a high growth orientation. Thereby, the results are in support of Hypothesis 3a.

The proposed interaction effects with necessity driven entrepreneurship are not significantly related to internationalisation activities at the time of wave 2. Testing the model with the outcome variable from wave 3 results in one marginally significant two-way interaction between the diversity of international experience and necessity driven entrepreneurship ($\beta = .10$, $p < .10$). Necessity motivation exaggerates the effect of a high diversity of international experience on internationalisation activities in wave 3. In contrast, opportunity motivation exaggerates the effect if the diversity of international experience is low. Thereby, the results do not support hypothesis 3e. Regarding the proposed interaction effects with young versus nascent firms, no significant interactions can be found, neither for predicting internationalisation activities from wave 2 nor from wave 3.

Figure 2: Simple slopes for the interaction between depth of international experience and growth orientation on internationalisation activities (wave 2)



DISCUSSION

Overall, the results are in line with previous studies suggesting that international experience is beneficial for new venture internationalisation (Oviatt & McDougall, 2005; Shane & Venkataraman, 2000). However, separate consideration of the depth and diversity of international experience yields interesting findings. Having a diverse international experience – that is, having spent time in a variety of foreign countries – appears to be more beneficial for new venture internationalisation than a deep and long-lasting experience from only a limited number of foreign countries. This plurality relating to many countries may broaden the horizon of the entrepreneur, facilitating the development of a global mindset, rather than a particular strength focussing on, for example, only one foreign country. Also Hutchinson et al. (2006) relate such a mindset to the diversity of international experience. Thereby, entrepreneurs are aware of a variety of foreign market opportunities. This can also be related to the theoretical and conceptual work on International New Ventures which incorporates a more global rather than gradual and discrete internationalisation (Oviatt & McDougall, 1994).

Another constituent of international potential in this study were network contacts. By and large, this study supports previous findings (Arenius, 2002; Rialp et al., 2005). Results show, depending on the time period, a significant or marginally significant relation between networks and the level of internationalisation activities. Networks provide new ventures with a competitive advantage for internationalisation activities in different ways. Networks may make new venture teams alert for international opportunities. For example, they may transfer knowledge relating to market and sourcing opportunities, or promising demand-patterns in a foreign market. Furthermore, networks may help to overcome foreign market entry barriers and the liability of foreignness. The initial marginal significance of networks on internationalisation activities in wave 2 could be explained by the dynamics of networks. That is, networks change over time. As Coviello (2006) proposes, these changes allow new ventures on their path to internationalisation to accumulate expanding network advantages. This process may take some time and so there may be a delay before a firm can make use of it for actual internationalisation activities.

This study proposed that entrepreneurial motivations affect the level of internationalisation activities among new ventures. Results revealed only partial and weak evidence for a relationship between high growth orientation and internationalisation activities. Even though the relationship is comparably weak, it suggests consistency with previous research on the relationship between growth motivation and internationalisation (Hessels et al., 2008). One

explanation for this could be the variability of motivations as outlined by Shane et al. (2003). Accordingly, motivations might matter in some cases, but not in others. For some new venture teams internationalisation may be a means to fulfil their growth aspirations, for others this motivation may result in different means to achieve them, i.e. growing in the domestic market. Another explanation might be a gap between dream and reality. A new venture may aim to start a business with the motivation to have it become as large as possible. However, new ventures may overestimate their potential and therefore be too optimistic.

No significant direct effect between necessity driven entrepreneurship and the level of internationalisation activities could be found. Previous findings indicate that necessity driven new ventures are less likely to pursue internationalisation activities (Dana, Hamilton, & Wick, 2009; Reynolds et al., 2002). This study suggests that whether a new venture is primarily driven by opportunity or necessity motivation does not explain subsequent levels of internationalisation activities. Other factors such as prior knowledge and network contacts appear to be of higher importance. That is, this positive stock of human and social capital might outperform potentially negative effects due to necessity driven entrepreneurship. Another explanation may be found based on the type of the business and its products or services. Hennart (2014) proposes that internationalisation activities are linked to the business model of a new venture. Some firms, for example, sell niche products to globally spread customers with demand generated of its own volition. This means the new ventures are engaging in internationalisation activities due to the nature of their products and services, without actively seeking to become engaged in foreign markets. Thus, motivation would not play a significant role.

The analysis has shown that firm stages have a marginally significant direct effect on internationalisation activities. Compared to nascent firms, young firms exhibit higher levels of internationalisation activities. This may be reasonably explained by the characteristic that a young firm is already in operation, while a nascent firm is still preparing its operational activities. Following theoretical rationales, a young firm can be engaged in more internationalisation activities, for example, export and import activities. A nascent firm, in contrast, might only be engaged in preliminary activities in order to prepare international expansion, for example, idea exchange and collection of information from abroad.

Hypothesis testing of the interaction effects revealed a significant moderation effect between the depth of international experience and growth orientation. International experience from many countries directly influences levels of internationalisation activities in a positive sense. For a positive influence of the depth of international experience, however, the nature of the growth orientation is crucial. Without accompanying high growth orientation, the number of years spent abroad does not impact the level of internationalisation activities. That is, having experience from many countries by itself is beneficial for new venture internationalisation. Whether a venture team is driven by high or low growth orientations does not play a pivotal role. Yet growth orientation does play a role if new venture teams aim to capitalise on a long-lasting experience abroad. This experience might be seen as given and innate by the members of the venture team and they might not realise benefits from this experience. A high growth orientation could possibly trigger the recognition of concealed opportunities and foster an engagement in internationalisation activities. Venture teams highly motivated to achieve a business as large as possible might also be more receptive to realise an opportunity. It can be assumed that they are more motivated to detect these opportunities and utilise potential benefits from previous international experience.

Whether a new venture is a nascent firm (that is, in its gestation activities) or a young firm (that is, already in operation) does not influence the impact of depth and diversity of international

experience and network contacts on levels of internationalisation activities. These findings may be seen as a support and extension of the International New Venture framework. Internationalisation activities occur early to such an extent that there are no moderating effects of firm stages. In other words, there is no major difference in the utilisation of international experiences and networks contacts whether the firm is still in its gestation or already in operation. Entrepreneurial new ventures use their social and human capital even before they enter the market in order to assess and pursue internationalisation activities. This supports the theoretical notion that these types of firms are different to traditional international companies which follow a staged-based internationalisation. Additionally, the results suggest that international new ventures are 'global' even before they are officially born. This finding would add to the knowledge by expanding the theoretical frameworks prior to the 'birth' of the international new venture.

One theoretical contribution of this study is the process view on internationalisation activities, incorporating nascent firms which are still in their gestation activities. In doing so, a particular strength of entrepreneurship research is considered (Davidsson, 2006). Oviatt and McDougall (2005) proposed that internationalisation activities of early internationalising firms may be traced back to the gestation process. This study shows that pivotal prerequisites for internationalisation activities are prevalent and already occur before a new venture is operating in the marketplace. Human and social capital are exploited from the very beginning, irrespective of the firm stage. These findings support and expand the theoretical frameworks on early internationalising firms. This study also shows that the construct of international experience is not unidimensional. Rather it should be differentiated between the diversity and depth of international experience. These underlying conceptualisations may have different effects for early internationalising firms. This study contributes also to the research stream by addressing the gap of testing for interaction effects between international potential and entrepreneurial motivations. These effects had not been explored sufficiently before (Shane et al., 2003).

This study also has some practical implications. The findings emphasise the importance of a diversity of international experience and network contacts for new venture teams who aim to internationalise their firm. It may therefore be more valuable for entrepreneurs to accumulate experiences from a variety of foreign countries. Shorter work stays or study periods abroad appear to be sufficient to equip entrepreneurs with a useful set of tools to foster internationalisation activities. Entrepreneurs should bear in mind that a network of contacts is critical when engaging in international activities. Facilitating international exchange between (nascent) entrepreneurs across countries may endow entrepreneurs with a competitive advantage and foster international business activities. Results also suggest that entrepreneurial motivations appear to be only of minor importance if new venture teams possess a diversity of international experience and substantial network contacts. Different support schemes for necessity and opportunity driven entrepreneurs, as suggested in some literature, may not be required in terms of internationalisation activities. A further important implication is that new ventures should be appreciated as early as possible in their developmental stage. Even if a venture is not in operation yet, enhancing a diversity of international experience and network contacts during gestation may be beneficial for an early internationalisation of the firm.

Limitations

As every piece of research also this study has its limitations. While this study has the advantage of being able to access longitudinal data, the observed time frame might not be sufficient. Future research could, without omitting the very early stages, observe new venture internationalisation during a longer time period. As many quantitative studies based on surveys

are, this research might be exposed to common method biases. These may result from a common source, item characteristics and item context, and the measurement context (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Additionally, the formative outcome variable internationalisation activities incorporates measures of network-like contacts which may be seen as similar to measurements reflecting the predictor network variable. However, this potential common method bias is reduced because predictors and outcome variable were measured at different points in time and by different items (Podsakoff, MacKenzie, & Podsakoff, 2012). Another source of bias which cannot be entirely eliminated is that survey questionnaires are subject to personal biases, in particular social desirability, leniency biases and the transient mood state (Podsakoff et al., 2003).

Another limitation refers to the validity of the dependent variable. Since the outcome variable is a formative construct, its content validity may be limited. That is, whether the scale items adequately cover the construct being measured (Malhotra, 2006). Similar concerns may arise in relation to the construct validity of the dependent variable. In order to test the validity, future research could follow a similar approach rather than relying on a one-dimensional construct to measure internationalisation activities.

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Family Business and Divorce: Continuing the Business after Family Failure

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Family Business and Divorce: Continuing The Business After Family Failure

Abstract

A family business is a hybrid of family and business but what happens to the business in case of family failure? Although marriage is a powerful institution the rate of divorce is as high as 50 % in several countries. This study explores family business management and ownership in the special, but not rare, case of divorcing owners. In this situation, problems arise when the logic of 'emotional ownership' is out-ruled by legal ownership since family law dictates the division of matrimonial property. Our findings, based on legal analysis and three explorative cases, highlight aspects where the legal framework is unclear and malfunctioning and identifies the need for ways forward that takes the survival of the business into account.

Introduction

She woke up one morning and decided that she wanted to leave me (...) In the line of fire I tried to look strong but it is the most devastating I have ever experienced in my life. (Peter, 5th generation owner manager)

As illustrated by the opening quotation, a divorce has far reaching personal effects. In this case, the person is also involved in a family business. A key distinguishing feature of family businesses is the intertwined and reciprocal relationship between the family and the business they own, aiming to achieve both a profitable business and family harmony (Sharma, 2004). An important topic in family business research is how to avoid or deal with the psychological, social and financial costs of business failure (Ubasaran, Shepherd, Lockett & Lyon, 2013; Shepherd, 2009). But what happens to the business in case of family failure? Most people regard marriage as a sacred bond that is presumed to last forever, for some it is sacred in a religious sense and for others in a more general, sociological way (Hopper, 2001). It is an act of legal, symbolic, psychological and cultural nature. Therefore, its dissolution is not taken lightly and a well-known fact in family research is that divorces are characterized by high levels of conflict (Hopper, 2001). In this situation of family crisis, finding a viable solution for the family's business adds complexity to an already strained situation.

Even if marriage is a powerful institution the rate of divorce has steadily grown since the 1970s and is now as high as around 50 % in USA, Sweden and several other countries (OECD)⁴³. This study explores family business management in the special but not rare case of divorcing owners. In this situation, problems arise when the logic of 'emotional ownership' (Zellweger & Astrachan, 2008) is out-ruled by legal ownership since family law dictates the division of matrimonial property. By acknowledging the difficult issue of divorce, we allude to the debate of more carefully dealing with family issues in family business research (Dyer, 2003; James, Jennings & Breitzkreuz, 2012; Litz, Pearson, & Litchfield, 2011; Rogoff & Heck, 2003).

Although a scarce topic in family business literature, previous research has pointed out divorce as a threat to family businesses (Gersick, Davis, Hampton & Lansberg, 1997: 60), proved its financial downsides (Galbright, 2003) and the shortcomings of the legal framework (Sund, Almlöf & Haag, 2010). This paper adds empirical evidence of how divorce among owners of a family business is coped with in practice. This is an important step in identifying issues and problems for further research and can also at this stage of exploration provide contribution to family business practitioners and their advisors. In family business, there is usually a large involvement of owners in the running of the business which connects ownership issues with

⁴³ Based on the *divorce to marriage ratio*, which is the number of divorces to the number of marriages in a given year.

management issues. Our approach is multidisciplinary in combining analysis of family law, which governs the terms in divorce, with family business management. Through the study of family business owner-managers in post-divorce phases, we shed light on the practical side of the problem to develop new knowledge.

Our paper is structured as follows: The next section describes how a divorce is regulated by law before moving on to the next section that describes problems with interpreting that law in practice. After a note on the method used we continue to three case descriptions based on life stories of family business owner managers in post-divorce stages. We then discuss the legal framework contrasted with the experience of the family business practitioners and the lawyers practicing the law. Finally, we offer our conclusions.

The legal regulation of divorce

According to the Swedish legal system, all the matrimonial property is included in the division in case of divorce, as well as assets which were acquired by a spouse before the marriage. In other national legislations further solutions can be found. In Germany, as one example, only the accumulated value of the property of each spouse, from the date of marriage to divorce, is divided equally (Zugewinnausgleich) (e.g. Schwab 2012: 122-130). The sole purpose of the legal rules on the division of matrimonial property, at least in Sweden, is to protect the spouse who owns relatively less matrimonial property. Thus the legal system disregards potential drawbacks for the family firm due to divorce.

The process of division of matrimonial property starts with an estate inventory where each spouse's assets and debts are valued and listed. Each spouse's assets, after deduction of debts, provide a net value which is summarized and divided equally. If a spouse owns shares in a family business, those shares are reduced to an asset among the other assets to be part of the calculation of the net value. These are the steps in short but getting there in practice includes several difficult hurdles, especially since the law is very undetailed and there is a lack of guiding cases from the Supreme Court.

Divorces in Sweden are of the "no fault" type which means that there is no legal difference pertaining to who's fault the divorce is. So there is no need for legal determination of that. Therefore, and as a result of the lengthy and expensive procedures for division of matrimonial property, many choose to solve it informally on their own. Both parties often wish to keep their discords out of the court system due to expensive proceedings and for privacy reasons. Therefore they often conciliate and their disputes are not publicized. If the parties do not succeed in reaching an agreement, each can apply to a court to have a property division executor appointed and the resulting settlement is not published, except if it is appealed which is uncommon (Beckman, Höglund, Lind, Telemann & Vängby, 2012).

If monetary compensation is not an option in the division of matrimonial property, compensation can constitute shares in the business and thereby result in a new owner and/or a new proportion of ownership shares among existing owners. A reluctant and/or unwanted owner can potentially be anything from an annoyance to a disaster for the circle of shareholders and the future of the family firm.

Spouses can write a marriage settlement in which shares in a business are made to separate property. Thus the value of the shares will not be included in a division of matrimonial property in case of divorce. However, it should be mentioned that in some countries, like Great Britain, separate property may, at the discretion of the judge, become part of a division (e.g. Duff, 2006; Masson et al, 2008, pp. 340-347).

Law-related problems of divorce in a family business

A divorce resulting in transmission of shares poses a threat to ownership positions and subsequently the members of the management team. The resource exchange, in response to this type of disruption, can seriously hamper business activities or result in costly buyouts of an unwanted new owner, which will also affect the finances of the business in the long run.

The business consequences of divorces in business families are several and diverse. The division of matrimonial property can directly cause financial constraints, ownership transfers, and new composition of the board and management team as well as an abundance of indirect problems subsequently following the direct ones.

The law regulating division of matrimonial property in case of divorce is short and generic meaning that much is left for legal practitioners to interpret. Generally, a division of matrimonial property including a business can result in:

- a) The owner-spouse keeps all of his or her shares without having to buy out the ex-spouse. One example is when the shares are owned as separate property and thus not included in the division of matrimonial property.
- b) The owner-spouse again keeps his or her shares but has to compensate the ex-spouse with money or other assets.
- c) The owner-spouse transfer shares to the ex-spouse.

If the business belongs to one of the spouses, that person is entitled to get the shares on his or her lot and instead provide financial compensation to arrive at the specified value share in the division of matrimonial property. Problems arise when such compensations cannot be financed or if both spouses have right to claim the business on their lot (because of shared ownership). How to handle a business included in estate division is legally simple and yet practically difficult. Therefore we complement our analysis of legal texts with the results derived from another study we have conducted⁴⁴. It gives the perspectives of practicing lawyers to capture how division of matrimonial property is carried out in practice and highlights the problems encountered when the law is interpreted. The aspects identified through that study is summarized into the following nine issues:

Severe conflict as the starting point

The appointment of an estate distribution executor presupposes a severe conflict where the spouses have already tried, but failed, to arrive at a common solution on their own or through legal representatives. Naturally, these prerequisites are not ideal for a productive negotiation. Normally several years has passed since the couple filed for a divorce, not to mention the times of conflict leading up to that point. The hardship of the situation really complicates the job the executor is actually hired to do.

Psychological/Emotional ownership

In working out an agreement the emotional attachment to the business complicates the finding of a viable solution. Your (conscious or unconscious) emotional attachment to an asset included in the division will strongly effect your evaluation of that property (Zellweger & Astrachan, 2008). In short, the task of a lawyer is, however, solely to calculate the value on all the assets and divide them equally. This means that they should not include the consequences of the

⁴⁴ That study is based on expert interviews with three lawyers from different law firms and builds on their experience from working with divorce cases for 77 years combined.

division, i.e. no consideration should be taken to the possibility for the business to survive after the division.

Identifying assets

In order for the executor to carry out the division of matrimonial property all assets must first be known. The executor's obligation in regards to identify all assets is largely unclear and even contradictory. Estate division follows a summary approach, but legislative statements proclaim that the executor may investigate as they find fit to identify assets. This is confusing since the point with the summary approach is not to scrutinize every detail but at the same time it says that you can do that but there is no regulation for how you should do it.

The value of the assets

The estate distribution executors interviewed all strongly pointed out that family businesses are among the most difficult things to value and that they have no legal guidance for valuations of the shares in a family owned business. The Marriage Code states what is to be included but nothing about how to make the necessary valuations – this is entirely left to practice. Furthermore, there are no leading cases from the Supreme Court. There are different methods but no unity on how they should be applied. It is common to use Net Asset Value but also valuations based on forecasted rising revenue exist.

Distributing shares or realizing their value

If the owner-spouse cannot in other ways compensate the other, an option is for them to agree to delay the division. One solution is to wait with the compensation until the owner-spouse sells his or her shares. When the level of compensation is negotiated the spouse who owns the business can threaten to give shares in the business instead of money because a minority post in your ex-husband/wife's business appears undesirable. In other cases the situation is reversed so that the spouse that does not own the business can threaten to take shares in the business if the other cannot manage to buy them out.

Time and cost

A divorce in Sweden is technically a short process. If there are no under-aged children (under 16 years) the divorce can be completed within a few weeks. If there are such children involved or if one of the spouses so wishes, there is a six month period for consideration. In practice it takes considerably longer before an agreement is reached, especially when valuation of a business is needed. The legal representation is charged by an hourly rate that at the moment is 156 €.

The “self-made” unofficial estate division

Since divorces in Sweden are of the “no fault” type there is no legal difference pertaining to whose fault the divorce is and no need for legal determination of that. Therefore, and as a result of the lengthy and expensive procedures for division of matrimonial property, many choose to solve it informally on their own. Without professional legal advice this can lead to problems surfacing unexpectedly much later. It can leave one of the spouses with no stake in the business or compensation for such, unknowing of their actual rights.

When family law and company law collide

Family law dictates the terms in a divorce while companies are regulated by commercial law. When a business is involved among the assets to be divided in case of divorce there are instances where both regulatory frameworks must be considered in parallel (e.g. shareholders

agreements). The family law rests upon ancient needs to protect the weaker person and is often stronger than commercial law when they contradict each other.

Low priority of policy makers

The lack of detailed regulation in cases of division of matrimonial property leaves a large room for interpretations. This is in itself understandable since the legal text must be inclusive and leave room for individual adaptation in order to work. The problem is the lack of guidance via recent rulings by the Supreme Court. An unfortunate consequence is large variation in interpretations, procedures and outcome by different lawyers.

In sum, there are many problems with applying the Marriage Act in practice when a family business is involved in a case of divorce. To get a better understanding of the effects the remaining part of the paper illustrates the issue from the perspective of three family business managers sharing their personal experience.

Method

To get at the practical micro-details of managing the business through family failure we present three cases based on case study methodology (Stake, 1995) and active interviewing (Holstain & Gubrium, 2002). Three anonymous entrepreneurs are interviewed in depth to narrate their lived experience of splitting the family but continuing the business. The cases were chosen on the condition that an owner had been through divorce and willing to discuss how he or she managed through the process. All the respondents are Swedish so that they adhere to the same legal framework. A limitation is that each case only builds on the interview of one person and thereby is limited to that person's perspective. Due to the sensitive nature of the topic we accept that weakness since the interviews still serves the purpose of exploring the practical issues encountered by divorced family business practitioners. According to Reay (2014), there is value in studies based only on a few interviews as long as they provide attention to unexplored topics. Our multidisciplinary approach of combining legal analysis with an exploratory study of how the divorce situation is practically coped with regarding the business brings new insights to the topic of family business longevity.

Case 1 - Gourmet Factory

Gourmet Factory is beautifully located in the midst of rural Sweden surrounded with fields, green hills and old oak trees. At this farm a selection of delicatessen are produced that combine ancient local traditions with modern entrepreneurial creativity. The ancestry of the farm goes back to the Iron Age prior 900th century although this family only represent the last five generations. Peter grew up here, eventually took over and is now struggling to keep the farm and save the business from bankruptcy.

The business

Peter's grandfather's grandfather was an officer in the German army that upon retirement moved to Sweden to settle down and pursue farming; for that purpose the farm was acquired in the 1860s. The farm life did not suit him at all and after some years of hardship he committed suicide by arsenic and the farm was left to his oldest son – 18 at the time. The son did however put his mind to farming the land. The era around the beginning of 1900s century saw grate development in farming as such and many stories are told about the innovative skills of the ancestor's son. Steady developments followed and eventually two neighboring farms were acquired, creating an even bigger farm.

The third generation took over some year's prior world war two and struggled to preserve the farm during wartime. Thereafter, decades of steady growth followed along modernization in line with what the time had to offer. Succession to Peter's father was arranged in 1971. Again the farm is well kept and stepwise transforming into a modern agricultural business. Some 30 workers are led by Peter's father. Peter's mother is a nurse but she also grew up on a farm and attended agricultural college so she is able to dig in when needed. Peter, being the oldest of three sons, was the silently appointed successor and early on started to work with his father:

To earn my father's love I had to prove myself capable with the farm work. I tagged along, sometimes by force and sometimes out of interest.⁴⁵

When Peter grew older he studied at agricultural college and eventually started a family. In 1993 he married Anna and their first child was born. Peter worked full time at the farm and ownership of the estate was transferred to him while the shares of the business were kept by his parents. Peter and his father worked together and Peter got to prove that he could keep the farm under control. He was moreover interested in new ideas which were a constant source of disagreement since the father preferred his traditional ways. In 1998 Peter bought the shares from his parents, although they still lived and worked together at the farm. 1998 was also the year of the divorce.

The divorce

Anna and I met in 1986. She was a big-city girl that found the idea of country life and farming romantic. I guess she found me exotic to begin with but that stagnated over the years as me and dad was constantly occupied with running the farm.

It did not help that Peter's father saw Anna as someone that was of no use. My father is very tuff in his unconscious judgment of people's ability, Peter explains. If she was raking the leaves he would show her the "right" way to do it but she would keep trying it her way and he would show his disapproval. Peter got trapped in the middle:

I loved her for the person she was, and is, not for her accomplishments. I did not want to take sides but she perceived that as taking their side [his parent's].

Looking back, Peter realizes that it was a gradual development for her but it came as a shock to him when Anna said that she wanted to leave. Peter did not want them to split up and felt that he needed help so they tried family counselling and couple's therapy and other specialists. The children were four and six. Peter struggled to keep it together but was not feeling well at all.

I sank deeper and deeper; I got the shingles and other medical conditions. The reason was that I held her responsible for causing all this and at the same time I felt that it was my job to fix it – a classical masculine reaction. Lately I have worked on developing my feminine side; to be more empathetic, reflective and loosen my need for control. Very taboo in the farming industry (laughing).

The turning point for Peter was when he took help for his psychological health that turned out to also cause his physical problems. But finding the right help was difficult; the counsellors

⁴⁵ All quotes concerning Gourmet Factory are made by Peter and freely translated from Swedish.

and therapists did not give anything besides prescriptions for pills which was not what he wanted.

Then you start to look for help in the suspicious areas; I have tried zone therapy, aroma therapy, magnets, crystals, all humbug there is, you name it! I was searching to save myself. In the mornings I showed a reassuring facade of a secure leader to the employees while at the same time being so fragile and vulnerable inside with my mind totally elsewhere. The business was just fine; it was my family life that was the problem.

In the hands of experienced staff it was “business as usual” at the farm for the time being. The family problems came first. At the 1993 succession the real estate was, through a conditional gift, made to separate property of Peter and therefore not included in the division of matrimonial property and a prenuptial agreement had also been arranged, protecting the ownership of the business⁴⁶. Still, there are lots of things to sort out with the children and joint belongings. No official division of matrimonial property was made but the issue was a delicate matter. Their home was full of family heirlooms of great value to Peter’s family. Peter was afraid that Anna would use that against him so he let her take everything she wanted of their joint possessions as long as the historical artefacts was left to him. Not necessarily because he was so attached to them personally, but because he felt obligated towards his family to preserve their history.

Peter could not see his beloved Anna, mother to his children, leave without any means. He took loans to provide her an apartment, free her of her study loan and in other way arranged decent conditions for her. These arrangements indirectly had an effect on the business because of Peters increased expenses. Anna never held any position in the business so there was no loss of human capital in that sense. But even if Peter was doing his best to keeping up his appearance he was really in a bad shape with meant that the business was lacking leadership and just continuing in its old tracks.

The post-divorce developments

The divorce took about a year to go through. Peter finally found help in mindfulness and spiritual development techniques and fully committed to work on himself for his own sake. In this search he also found his new wife, Carol. She makes cheese based on her grandmother’s recipe and Peter provides the milk in the little cheese factory set up at the farm. The new family was flourishing and two new children arrived. The farm was run by Peter and his father and Carol was tending to the little cheese workshop that started to earn a reputation (although deemed as nonsense by Peter’s father). Traditional farming was however an industry on decay. The margins were minimized and the low prices offered by global competitors were impossible to compete with. In an attempt to scale up the business, two more farms were acquired in 2002. But the conditions kept getting worse. The equation did not end up for anything, not for grain, milk or meet production.

The culture is to tuff it out and wait for better times which is not working any longer. I reached out instead.

Peter relied on his big network of businesspeople, academics and politicians. He took their help to try different approaches. They tried to find partners, subcontracting etc. Eventually a sale was forced by the bank that wanted over 9 million Euros back. The entire farm was put on the

⁴⁶ Land must be owned by a physical person while the farming in this case is turned into a limited company that pays tenancy to the landowner

market for 12 million Euro. To sell it all was a very hard blow. It made headlines in the local news: “Bankruptcy at the renowned Gourmet Factory Farm!” Also the divorce had been the talk of the town back in 1998.

No buyer was however to be found but the real estate agent made queries at the neighboring farms and came up with a solution. Five neighbors were interested in buying a part each of the surrounding land, leaving the main buildings and a little piece of land for Peter. After being so close to losing it all he viewed his neighbors as his saviors. Now the family has a farm with 40 animals, two employees, no bank loans, and keep experimenting with their gourmet cheeses and other delicatessens. There are many old buildings to maintain and liquidity remains a challenge although in a much more manageable scale.

Lessons learned

Seek help. And if the help is not helpful, seek other help. It must be the right match between persons, content and form. Take proper care of yourself both mentally and physically.

Be responsible for your own happiness. Many make themselves into victims, blaming external factors for their problems. Peter wants to recommend others to build their happiness based on their own capacity, passion and ability, to follow their calling.

I got the work of four generations in my lap – “here you go, do something wise with it”. I could not develop my own nature under those circumstances. (...) Nowadays I am even thankful for that I have been through because it forced me to seriously work with myself.

Case 2 - Clean Kitchens

Clean Kitchen (CK) produces complete kitchen solutions mainly for new apartment buildings sold to construction companies. Today the business is run jointly by second and third generation family members, employ 190 persons and turnover 60 million Euro.

The business

After Erik graduated with a master degree in engineering he started to work in the very nascent computer industry. In the mid-1970s when his father asked him to take over the little construction company he had founded, Erik did so, although quite reluctantly. At that time the business was building wooden houses with some 10 employees up in the north of Sweden. His sister is since long working in the business, handling the paperwork. Erik soon diversified into electronics and grew the business through mergers and acquisitions. Also his family grew and Eric and his wife got five children. In the 1980s he decided on an ownership transfer where his children got 10 % each, his wife 20% and he kept 30% himself. At that time, they had about 50 employees so they had grown steadily but was nowhere near the size of today. The crisis in the construction industry hit them hard in the beginning of 1990s but others were even worse off and some more businesses could be acquired cheaply.

We have been able to reinvest most of the profit in the business and take some dividend. The kids want some money now and then but we have mainly invested, and modernized. We have really made some good money over the years.⁴⁷

A big modern production facility has been built and the production of their complete kitchen solutions is done in a highly automated fashion. Very few do this type of production in

⁴⁷ All quotes concerning Clean Kitchen are made by Erik and freely translated from Swedish.

Scandinavia, particularly in any larger scale because of the high costs, so CK are able to compete with higher quality to a higher price. The minimalist Swedish style of design is also doing well in other parts of the world.

The divorce

The cause of the divorce is not something Erik wants to disclose other than that he offered his ex-wife monetary compensation that well exceeded her share in the division including the 20% in the business:

I asked her that if you get money that will provide for you in over 200 years so that you are financially independent, then would you feel content. And yes, she thought so, and she is still very satisfied with that.

They divorced in 2009 after over 30 years of marriage. A partial estate division was arranged to free up the capital. Before the ownership transfer a special dividend was made that provided her an initial payment. It was also agreed that she would take over four private pension insurances from Erik. The first one was transferred in the first step but when the remaining three was to be handled the problem arose:

Since we were in total agreement we just used our company lawyer to draft the terms. She got so much money from the firsts step so she was not in a hurry to take out the rest. We also settled some other businesses with some property she owned but she was moving abroad so she did not want to keep property in Sweden. To finalize the estate division some years later she was to receive the remaining three insurances but this time the insurance company said no; it is not possible to do so. "What do you mean not possible!?!". It cannot be done according the Marriage Code they suddenly claimed! It was the same company and the same type of insurance as the first one.

The insurance company (one of the major) now claimed that the Marriage Code is unclear:

They say that it is fussy and when my lawyer reads it he agrees that it can be interpreted in that way but not necessarily. There might be a case tried in the Supreme Court that we are waiting for.

This has put a halt to the estate division and Erik sees no other way than to sue the insurance company. But he is really reluctant since that would be very time consuming.

It is no fun at all to run such processes; I want to run my business, not something else. You think you have engaged a respectable insurance company but now they are surely not acting respectable... you know what; I think they do this because they rather want to hold on to the money. They are stalling, not answering letters or anything. I mean, come on!

In terms of how the divorce has impacted the business Erik sees no effect except from the ownership change of his ex-wife's 20 % being transferred back to him. She was never involved in the business either.

Everyone here knows who we are so we tried to keep it as quiet as possible because people like to talk. We kept it quiet but these things spread anyway.

The special dividend that was made was not a problem; we could rather do it more often than we have so far, Erik explains.

The post-divorce development

The business is running as usual but Erik is starting to think about the next succession. At the moment, three of the children in the third generation are working in the business. Erik is now regretting that he gave shares to all five of them so early on. It has caused problems:

I can clearly see the downsides. It was just fine when they were young but when they start families of their own it gets complicated. Their partners might be of different opinions on what is right and wrong. Now some of them work here and others are viewing it from a distance and are pushing for dividend. They have received quite big amounts and not all of them handles it very well to put it mildly.

Erik also thinks that the business has become a bit too large for them to manage. And running a family business is hard work. Maybe parts of it can be sold to compensate those that are not involved?

The divorce has, according to Eric, had no effect on the business whatsoever.

Lessons learned

The “right” level of compensation was decided in dialogue between the spouses without valuation of the business. Problems can arise even when the parting spouses are fully in agreement and there is no lack of means. The problem with the insurance company was unexpected and the outcome is still unknown.

Case 3 - Bakery Brothers

The Bakery Brothers is one of Sweden’s large producers of cookies and their products are to be found in supermarkets all over the country. The turnover is 9 million Euro and they employ 50 people at the factory. The last decade has seen big changes to the company both in terms of large growth in sales and in governance and ownership. As the company name signals, there are brothers, and those brothers have wives. This case is based on John’s story; he is the current CEO and one of the main owners.

The business

John’s father was running a bakery that he had once founded. In the 1980s John partnered with his two brothers and started an industrial production of cookies together with their dad. They do a whole range of foods but the cookies are their main business. When it was time for the father to retire, John took over as CEO and the three brothers bought his shares far below market value with an arrangement that their father would stay involved and earn a salary so that the succession was financially possible for all parties. This arrangement is still in play although the father is approaching 80:

He still earns some salary and he is still here every day. In this way he has made an exit that he is comfortable with and that works for all of us.⁴⁸

The three brothers own a third each and the shareholders agreement written by the company attorney regulates terms for transfer of shares.

⁴⁸ All quotes concerning Bakery Brothers are made by John and freely translated from Swedish.

The divorce

Five years ago John's wife had an affair. It involved John's best friend, was really badly handled and became the big talk of the town.

She told me in October that she wanted a divorce but we decided to keep it quiet over Christmas for the sake of the children but they figured it out earlier anyways. They were both underage so there was the six month trial period but she moved out before new-year even if the divorce was not legally completed until the summer.

The brothers had an ownership agreement regulating that the shares would not be included in a potential divorce. However, the validity of that agreement turned out to be uncertain.

We had a contract, signed by all three wives, that they had no claim in the business in case of a potential divorce. When my divorce was a fact I referred to that ownership agreement that said that she had no right to the business. In our divorce she was the guilty one which led to that she did not try to make any claims either. Thereby she did not receive anything. It did however turn out that the ownership agreement was not valid! It so happens that one of my friends is a lawyer and he made it clear to me that there was no chance that this contract would hold in court. Since she took the blame for the divorce she just accepted and left so I did not have to go through a legal process though.

They thought they had taken legal protective measurements but they had an ownership agreement instead of prenuptial agreements and, in that case, the family law prevails.

My former wife and I did not have a prenuptial agreement. Now we all have one where the right things are written. Before my divorce none of us had that. But they had been there during the development of the business, had their house mortgaged and so on. And you always marry with the intention that it is to last forever. To ask for a prenuptial agreement is sensitive. It can be taken the wrong way. My ex-wife and I had lived together for so long and she had put her career aside over the years so that I could manage the business. But then again, this is done so that the business can live on, it does not work other vice.

For the business to live on and prosper is also of interest to the ex-wife since it involves the future of her children. John took a loan to buy his ex-wife's part of their house. Other belonging was split in a way they both agreed on.

The post-divorce development

The business is developing very well in the hands of John and his brother. New expansions are initiated that will result in a tripling of turnover in five years.

Maybe all of this made me extra determined to show my capability by leading the business to new heights? It was a big kick to get to prove that it could turn into something great. You never know exactly where your motivation comes from but somewhere deep inside I think I wanted to prove to her that she did the wrong choice.

About a year ago an unpleasant reminder of the divorce literally appeared as a letter in the mail.

I received a MasterCard bill of over 15.000 Euro. I had forgotten about that card and that both I and my ex-wife had signed for it. She could not pay so it was left to me. We made a payment plan for her to pay me back because I do not want to pay for her vacations with him. But I feel uncomfortable to have this arrangement ongoing.

This was a mistake by the bank that had helped them to separate their financial relation. They were sorry but that was not very helpful. So even if things have worked out well for John in the end with a new wife and a very prosperous business, there are reminders that keep stirring up the situation they all want to leave behind.

Lessons learned

Even if Swedish divorce law is based on a “no fault” divorce, it matters in practice. The solution arrived at in this case is a joint agreement based on the parting spouse not making any claims. It also points to the vulnerability of relying on advisors that are lacking knowledge of the different frameworks simultaneously in play.

Comparing the legal framework to the experience of lawyers and family business practitioners

A divorce is regulated by family law and specifies how matrimonial property is to be divided between parting spouses. In practice other arrangements than what the law stipulates can be made. The one of the spouses that initiates the divorce can decide to waive what they have legal right to as the wife did in Bakery Brothers. Also the opposite can occur, depending on the divorce scenario, so that compensations above the requirement can be made to make up for wrongdoings as in the Clean Kitchen case. In this way, the legal precautions recommended (e.g. ownership and prenuptial agreements) might be in place but in the end not being followed anyway. Such “home-made “arrangements have the danger of being regretted later on which was pointed out by the practicing lawyers interviewed. The concept of emotional ownership explains how family business practitioners identify themselves with the business (Zellweger & Astrachan, 2008) and thus have a different rationale for arriving at the value of their assets than the available models for business valuation in play. This further complicates the chance of reaching agreements between the spouses.

Even in cases of agreements and the required means available, unexpected problems can arise that complicates and prolongs the division. In the Clean Kitchen case the former spouses was in total agreement, took professional help to outline the terms and still run into problems when the insurance company changed position during the process. This is an example where the interpretation of the law is unclear and treated differently in practice. It is also an example of an issue in need of rulings by the Supreme Court to lead the way. Also in the case of the Bakery Brothers there was a contract written by a lawyer and signed by all parties that in retrospect was not valid. Here the problem was lack of knowledge from the lawyer writing the agreement of which factors to consider. It alludes to the fact that commercial law and family law sometimes are incompatible but needs to work together in the case of family business. The interviewed lawyers pointed to problems with the Marriage Act pertaining to that it is very old and seldom updated which means that it perhaps reflects outdated social structures no longer valid.

On the individual level, responses to failure (in this case of marriage) can really differ. In the Gourmet Factory case, Peter’s initial reaction to the divorce distracted him from tending to the business and made him rather apathetic. John of the Bakery Brothers on the other hand worked extra hard to at least show his ability in business success. These two opposite reactions illustrate

how the motivational effects of failure can be twofold (Ucbasaran, et al., 2013). Yet, Peter is the one that points out that he eventually learned things about himself from his marriage crisis that he found useful later when he run into business crisis. Also highlighting the importance of considering different time perspectives to the effects.

Professional help is recommended but it is difficult to find the help that is right for the unique situation and persons. All three cases show the many facets of family business management where several issues that relate to both family and business are integrated. Giving advice is difficult given the uniqueness and complexity of each situation and the divorce cannot be treated in isolation but is always embedded in a unique context. Professional help that can encompass all of that is scarce.

Conclusions

We conclude that a divorce among owners of a family business will, apart from the suffering of involved persons, impact the future of the business in different ways. There are many problems with applying the Marriage Act in practice when a family business is involved. The outcome of the division of matrimonial property is uncertain but will directly or indirectly have an effect on the business. Some of the consequences are new ownership distribution, deteriorated finances and disturbed business developments. The task of the estate distribution executors is strictly to handle the division without any consideration of consequences for the business and its stakeholders. The cases show that the agreements made in practice are however based on the divorce scenario rather than following the legal framework. Family business practitioners have an emotional attachment to their businesses leading to a different perception of the value of the business besides the financial terms making agreements on division of property difficult. The negotiations aided by legal representatives takes time and becomes costly. This, in turn, pushes “home-made” solutions in situation of conflict and uneven power distribution between the spouses. The cases also show the vast difference in individual reaction to crisis and grief where both negative and positive business consequences are illustrated. We also identify instances where family law and commercial law collide and illustrate problems of conflicting logics between the two legal frameworks. These clashes are difficult for legal advisors to handle since they normally specialize in one but should preferably know both to provide good family business advice. From this follows that even in cases of agreements and the required means available, unexpected problems can arise that complicates and prolongs the divorce process. Any delay of the division is harmful to the business since the uncertainty complicates management decisions and puts developments on hold. The protective measurements available can turn out invalid and thereby provide a false security. Increased knowledge is of outmost importance in regard to practitioners, and their different advisors and support functions (accountants, lawyers, bankers and interest groups). Increased attention from policymakers is also needed to grapple with the lack of coherence and the many areas of uncertainties on how to interpret the law. In the situation of divorce in a family business the gap between theory and practice is truly hurtful. By juxtaposing our analysis of the legal framework with the real-life experience of practicing lawyers and family business managers we view the issue from several perspectives. Our contribution so far lies manly in turning attention to the problem, exploring the situation and identifying issues. Future research must continue towards developing family business recommendations for how to manage the business in case of family failure.

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Progress and Social Ties as Constraints of Entrepreneurial Exit

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Progress and Social Ties as Constraints of Entrepreneurial Exit

Abstract

Many entrepreneurs join forces with family members or partners for working on the start-up process. A possible reason is that working with family members generates psychic income for them. But if progress is worse than expected, a potential downside for an entrepreneur might be that the emotional attachments make exit more difficult. In survival time models on individual and firm level, I account for the time-dependent completion of start-up milestones as a proxy for progress. Results show that (1) team stability increases after progress is made; (2) given a similar level of progress, stronger social ties are associated with a lower likelihood of entrepreneurs' exit; and (3) stability of the team is not affected by exits or entries.

Introduction

People become entrepreneurs for many reasons. In general terms, they can be categorized into expected monetary returns from successfully founding a firm and the psychic gains from being self-employed (Gimeno et al. 1997). The start of the entrepreneurial process is often accompanied with the question of founding alone or together with others; the entrepreneur's social network is a source for potential co-founders. Typically, partners and family members form the network's closely tied "core", while friends or colleagues from work are connected more weakly (Renzulli & Aldrich 2005). As an empirical fact, a significant fraction of entrepreneurial teams consist of members with strong social ties, very often spouses or partners (Ruef et al. 2003). These teams are on the way to become family businesses, and some of their characteristics might be different to non-family start-ups.

Following initiation, the entrepreneurs face the challenge of what to do and when to do it. Current research aims to understand how completing start-up activities lead to good or bad outcomes of the process. Some approaches investigate effects of specific activities, such as business planning (Delmar & Shane 2003; Delmar & Shane 2004); others focus on timing or sequence of activities (Lichtenstein et al. 2007; Liao et al. 2005). Since the available options and decisions along the start-up process are subject to uncertainty, context-specificity and emerging opportunities, there is some doubt on the benefits of a structured and planned founding process (Sarasvathy 2001). Whether the way of a young business turns out well or not is reflected in its owners' decision to continue or exit the business early. But the decision of an entrepreneur to leave the business behind is likely to be influenced by the social ties among the owners. Based on family business research and network theory, I argue that having family members as co-founders accounts for psychic income and increases the personal cost of exit. This will add stability to relatively underperforming businesses, as it appears with entrepreneurs who tolerate low performance (Gimeno et al. 1997). I further suggest that exits will be associated with a higher likelihood of the remaining team to disband, and entries with a lower likelihood.

Using survival analysis, I account for the dynamic nature of activity completion with time-varying covariates. This allows a more precise estimation of other effects, specifically how the social ties among co-founders create stability, and how team changes affect the future of the start-up. Results of the work (1) offer insights into the importance of activity completion; (2) show that close social ties - for better or worse - prevent exit of entrepreneurs; (3) and do not support that team changes influence the chances of the remaining team.

The work aims to advance the understanding of entrepreneurial exit in context of social ties, and highlights methodological advantages of survival analysis (Yang & Aldrich 2012). It is an attempt to contribute to the integration of family business research and entrepreneurship

(Nordqvist & Melin 2010; Anderson et al. 2005). The remainder of the work presents theory and hypotheses, explains the methodology and discusses results and their practical implications.

Theory

Framework

Entrepreneurial exit, meaning a co-founder's decision to give up working on the start-up, corresponds with the termination of the start-up process in the case of one-person ventures. In larger teams, this is not necessarily the case; others might continue their effort and succeed or disband at a later point in time.

Threshold theory (Gimeno et al. 1997) makes an entrepreneur's decision to exit the start-up subject to four factors: economic performance of the venture, psychic income associated with the venture, outside opportunities and switching costs. Depending on personal characteristics, skills and abilities, entrepreneurs are able to pursue different occupational options on the labor market. They evaluate their expected utility from such potential outside options in comparison to the utility they derive from working on the start-up. If the present value of the outside option is higher at one point, they exit the start-up and switch occupation. For all options, utility is generated from monetary rewards and the psychic income from the respective occupation. Thus, each active entrepreneur sets an individual performance threshold associated with his or her current venture and outside options. The decision to exit is ultimately subject to this threshold: Below it, expectation of entrepreneurial success is too low to compete with the rewards of the outside opportunity.

Since low-skilled individuals have lower performance thresholds due to their comparatively less attractive outside opportunities, threshold theory helps to explain the persistence of relatively underperforming firms. If one entrepreneur gives up and others continue trying, it might be because the remaining ones have lower performance thresholds.

Using exit as a measure for entrepreneurial success has some practical advantages. Some indicators of success consider a benchmark of monetary rewards for the founders (Davidsson & Gordon 2012), but many ventures may not be able to sustain them for long. Another indicator uses the founders' self-assessment: But if they are asked whether they perceive their venture as successful, their answers might be biased positively by overconfidence (Forbes 2005). Both types of measures can classify ventures as successful too early, when the future of the venture is unclear or unobserved. In contrast, exit as a measure is irreversible and clear-cut; it is the decision of the individual with highest exposure to its consequences; and it is based on aggregated information unavailable to outsiders, corresponding to the four factors of threshold theory.

Progress

The entrepreneurial process is embedded in the way towards success. It consists of several milestones, or activities, that must be completed to achieve operating status (Kim et al. 2005). It results either in the birth of a firm or in the whole team's decision to give up and disband (Amoros & Bosma 2014).

Analyzing the structure of the entrepreneurial process remains a present challenge in research (Davidsson & Gordon 2012). Current approaches can be categorized into three groups: The first gives attention to the impact of specific activities or categories of activities on success. Some activities are more substantial to entrepreneurial success than others. Examples include planning activities (Delmar & Shane 2003; Delmar & Shane 2004), obtaining outside funding

(Beckman et al. 2007) or registration to government agencies (Yang & Aldrich 2012). These works relate the completion of specific activities to one or more success indicators for the start-up. The second group explores similarities in the temporal ordering of activities and optimal sequences (Liao et al. 2005; Tornikoski & Newbert 2007; Liao & Welsch 2008). For example, selling the first product can require many other previous activities to be carried out, such as gathering resources, developing and producing it. The third group focuses on temporal patterns of activities without regard to their type. It uses measures such as the rate and concentration of activities during the entrepreneurial process (Carter et al. 1996; Lichtenstein et al. 2007; Hopp & Sonderegger 2014) and determines shared characteristics of successful ventures.

A consensus among the different streams of research on the entrepreneurial process is that the completion of start-up activities is a key requirement for entrepreneurial success. Putting the team's combined effort into achieving important milestones is the main objective of the process. Accordingly, observing the completion of activities can serve as an indicator for entrepreneurial performance in the framework of threshold theory. During the phase after initialization, the ongoing collaboration of the team members might reveal previously unknown problems or a lack of abilities to tackle challenges ahead - not being able to complete these activities means bad performance.

If progress towards firm creation remains beyond expectations, the performance threshold of one or more team members might not be fulfilled. As outside opportunities become relatively more attractive, the likelihood to switch occupation rises as a consequence. Vice versa, exits of individual entrepreneurs and disbandment of teams will become less likely if firm birth becomes feasible.

Hypothesis 1: The number of activities completed decreases the likelihood of member exit

Hypothesis 1a: The number of activities completed decreases the likelihood of disbandment

While it is clear that activities are important per se, it remains disputed which ones are most important. Especially the creation of a business plan remains a controversial issue. Some argue it has a strong impact on the following performance and outcome of the entrepreneurial process (Delmar & Shane 2003). If this were true, it would make a case against the "effectuation" school of thought, where constant adaptation and flexibility is encouraged rather than planning (Sarasvathy 2001). Others argue that entrepreneurs write business plans only when institutional stakeholders require them to do so (Honig & Karlsson 2004). After all, business plans remain an important tool for investors to decide whether or not to invest (Mason & Stark 2004).

From his or her perspective, an entrepreneur is less likely to switch if a milestone is completed that he perceives as important rather than an unimportant one. This is simply because the benefit to the entrepreneur's perceived progress is greater when a difficult or essential challenge is mastered. If completing a certain activity significantly improves their success expectations, the entrepreneurs will be more likely to stay in the business. The founding team consists of individuals with the highest level of information regarding their activities - it is worthwhile to examine their reaction to such an event most carefully. I suggest that both writing a business plan and obtaining outside funds are perceived as important events which - upon their completion - reduce the entrepreneurs' risk to switch and the team's risk to disband.

Hypothesis 2: Finishing a business plan decreases the likelihood of member exit

Hypothesis 2a: Finishing a business plan decreases the likelihood of team disbandment

Hypothesis 3: Obtaining outside funds decreases the likelihood of member exit

Hypothesis 3a: Finishing a business plan decreases the likelihood of team disbandment

Social ties

Social ties of different types exist between the members of the start-up team, and they might be a substantial factor for threshold theory by influencing psychic income and switching costs.

Very close social ties imply a strong personal relationship to the "core" members of a person's social network. The core often consists of partners or family members, whose relationships are characterized by reciprocity, mutual trust and obligation (Renzulli & Aldrich 2005). This allows business owners to gain substantial benefits from closely tied persons, in the form of resources, advice and emotional support (Arregle et al. 2013). Even in cases where the family network reaches far beyond the formal boundaries of the firm, they help firm owners to bridge structural holes (i.e., providing resources that are unavailable otherwise), during many phases of the business (Anderson et al. 2005).

There is evidence that the firm objective in family firms is different: If family members are formally involved in the business, the aim of the firm's strategic decisions tends to shift towards preserving socioemotional wealth in the family. They are able to satisfy needs for belonging, identification and in the long run, the preservation of family dynasty (Gomez-Mejia et al. 2007). Spouses or partners that found businesses together, sometimes referred to as "copreneurs", enjoy spillover effects when combining family and job and sharing a common goal in their occupations (Matzek et al. 2010); they might have an advantage for resolving role conflicts, which occur when a person is at the same time a business partner and a relative (Brannon et al. 2013).

All of these points add to the psychic income when entrepreneurs team up with persons from their core social network. In such teams the psychic income accounts for a larger share of the total utility the entrepreneurs gain from working on the start-up.

Potential entrepreneurs anticipate the benefits of collaborating with closely tied people, which is likely to explain at least partly the overrepresentation of couples among the start-up team population (Ruef et al. 2003).

There is, however, a downside to founding with partners or family members, which might not be so obvious in advance. If things turn worse than expected, social ties can represent a hurdle to end the commitment and switch to a more promising endeavor (Lubatkin et al. 2005; Ucbasaran et al. 2003). Withdrawing means a loss of knowledge and instability for the remaining team, imposing social costs (Kim et al. 2005). The decision to exit the venture could further be interpreted as a breach of trust or a disbelief in others' abilities. It could lead to a permanent loss of reputation within the "traitor's" social network. In cases where the decision to quit has consequences in private life, entrepreneurs might hesitate to take it.

There could be another case when a specific member's abilities are indeed not suited to the challenges, but the member would prefer to stay in the team as a free rider (Leibowitz & Tollison 1980). When the rest of the team would like to oust this specific member, social ties and private consequences would again represent a substantial hurdle to do so.

Both problems are not limited to especially closely tied co-founders; they exist in a mild form also for teams where business partners have hardly any pre existing ties. If, in the extreme case, two founders do not know each other before initialization, they start to do so at this point in time. At this point, they become part of each other's network, connected at least by weak social ties. Instead of leaving, an entrepreneur might choose to continue for the sake of others.

Psychic gains and increased switching costs associated with social ties have a common root. As soon as others are involved, their fate becomes a factor for the decision maker, increasing his commitment to the start-up. Social ties to co-founders will prevent entrepreneurs from giving up, regardless if their effects are viewed as bad - by preventing the entrepreneur to switch to a different occupation, or as good - by letting the team stick together during tough times. Consequences of the decision to exit are weighted by the strength of the respective social ties. Given the same status of the business regarding expected success, an entrepreneur who is strongly tied to one or many co-founders will be less likely to exit the team. Sole proprietors will be most likely to give up; they do not experience the hurdles of higher switching costs or benefits of psychic gains associated with social ties.

Framed in the terms of threshold theory, closely tied teams might represent "persisting underperformers" (Gimeno et al. 1997).

***Hypothesis 4:** Given a similar level of progress, entrepreneurs with closer social ties to their co-founders are less likely to exit start-ups*

***Hypothesis 5:** Given a similar level of progress, entrepreneurs in teams are less likely to exit start-ups than sole proprietors*

Considering that social ties are formed between each team member, the sum of total effects is likely to be higher in large teams. If the total amount of psychic gains on the one hand and the cost of exit on the other multiply with the size of the team, entrepreneurs will be less likely to exit if they have more team members.

***Hypothesis 5a:** Given a similar level of progress, entrepreneurs in larger teams are less likely to exit*

Team changes

After one or more founders decide to exit a start-up, there is often a remaining team still trying to complete the entrepreneurial process. Threshold theory allows using exits as well as entries to predict the fate of the remaining team. In its framework, a founder decides to exit after performance expectations fall below his or her individual threshold. This might be triggered by information received during the entrepreneurial process. The dynamics of the start up process, learning processes of the founders and changes in the market environment produce permanent updates relevant for success expectations. For example, it is not unlikely that some challenges turn out to be too hard to master and that initial (over-)confidence in knowledge, skills and experience is lost (Koellinger et al. 2007). The team's inability to complete an activity then lowers success expectations. From this perspective, observing a team member quit is preceded by bad news for the venture - ultimate success chances are lower than before, just not low enough yet for the remaining members' thresholds.

A team member leaving has some direct consequences for the team: Important human capital and skills are removed (Unger et al. 2011), and instability creates a need for costly reorganization and redistribution of tasks (Kim et al. 2005). The case is even worse for the remaining team considering the dynamics of threshold theory. If performance expectations decline in the same way for all team members, the first member to leave is the one with the highest performance threshold; His or her superior characteristics and skills allow him or her to select more attractive outside opportunities than his/her colleagues. This means that the first member to leave is at the same time the one with the highest share of human capital relevant for the venture's success.

And lastly, a co-founder leaving means the loss of the stabilizing effects that were maintained by the social ties between him and the remaining team members. They lose the psychic gain of collaboration and have lower switching costs for themselves, which makes them more likely to exit subsequently.

The assumption that exit is a consequence of bad news and the loss of human capital and social ties add up to a lower chance of success for the remaining team, or a higher likelihood for them to disband entirely.

Following similar arguments, member additions or entries would mean a higher or at least equal expected chance of success. New members will join only if their previous occupation did not offer a comparably high level of expected utility. Assuming they have a longer window of opportunity to join the venture, the point in time when they decide to join will be likely to come after "good news" rather than "bad news"; their information at this time lets them assume higher success chances than shortly before.

The consequences are mixed: similar to the exit situation, an entry might make reorganization necessary, which delays the achievement of further milestones; however, adding a member can be a way to address needs of special skills and human capital, enabling the venture to achieve such milestones (Kim et al. 2005). Social ties coming with the new team member will add to stability via psychic gains and increased switching costs.

After all, the positive effects are assumed to outweigh the negative ones - otherwise the existing entrepreneurs would not be willing to share ownership with an additional member. They would only agree to an entry if they anticipate receiving higher utility from doing so, either by an increase in psychic gain or expected success. It will lead to a decreased chance that the team disbands after a new member is added.

Hypothesis 6: *The chance of team disbandment is higher after an exit occurs*

Hypothesis 7: *The chance of team disbandment is lower after an entry occurs*

Method

Data

Data is used from the Panel Study of Entrepreneurial Dynamics II (PSEDII). The study follows 1214 young ventures, representative for the US population, from 2005/2006 until 2012/2013. The initial cohort was selected from 31845 phone interviews when they gave a positive response to the question "Are you, alone or with others, currently trying to start a new business, including any form of self-employment or selling any goods or services to others?" (Reynolds & Curtin 2010)

The PSEDII provides information - amongst others - on the start-up team members' demographics, their relationship, date and type of activities completed, and team changes. See Reynolds and Curtin (2010) for an extensive documentation of the dataset.

Estimation

Survival analysis is used to test the hypotheses. Two sets of models are generated for the analysis: For the first, the dataset is reshaped in a way that each individual in the dataset represents one subject. For the second, the original format is used, where one subject is a start-up team consisting of either one or many individuals. Event of interest is reported exit of an individual in the first analysis (Question G4c in the PSED's coding scheme) and reported disbandment of the team (Question E51) in the second. For individuals, the onset of risk starts

with the report of completing the first start-up activity in case of founding members, or the time of entry for members who join the team later (Question H9). The subject is treated as censored if either the individual is still active in the team at the end of the study, or the sample is lost any time during follow-up. For teams, the onset of risk starts with the first reported activity and censoring occurs if they are either reported as still active at the end or lost for follow-up.

Cox regressions help to overcome many pitfalls of commonly used logistic regression: Yang and Aldrich (2012) note that many samples have started the process years before the time of the initial interview. The results become biased from left truncation, because samples that might have failed during this period are omitted. Following their suggestion, the bias can be accounted for by combining the STATA-command "stset" with the option "enter". This allows a distinction between the initial onset of risk and the time of enrolling into observation (Cleves et al. 2010).

Since dates of team members' exit are only reported at the time of the yearly interview, the exit date is generated at the time half in between the interview where the exit is reported and the previous one. Entry of team members other than the interviewee is reported more accurately, but in some cases this precedes the date of the first activity. It is then replaced by the date of the first activity in order to match the operationalization used for the interviewee.

Representativeness of the analysis of individuals is obtained by applying the renormalized team-level sampling weights. For the team-level analysis, the team-level sampling weights are multiplied with the inverse of the team size. This is necessary because teams with more members are overrepresented due to the PSEDII sampling protocol (Yang & Aldrich 2012).

Since the analysis of individuals contains samples belonging to the same team, these entrepreneurs will share some unobserved factors important for the success of their venture. These factors, for example a certain team's stroke of luck, will shift every team members' survival hazard in the same direction. Using the specification for clustered sampling corrects for such team-specific correlations of failure-time.

Explanatory variables

For explanatory variables, another advantage of survival analysis is the possibility of using time-changing covariates.

The PSEDII provides the dates of 33 start-up activities (in sections D and E). The variable "*No. of Activities*" increases by one after each completion of an activity during the process. In the same way, the variables "*Business Plan*" and "*External Funding*" increase from 0 to 1 for the period after the team reports completing a business plan (Question D4) and receiving external funds (Question E4). This allows a dynamic estimation of hazard ratios, increasing or decreasing after the specific event.

Variables measuring the social ties are operationalized as fixed covariates; they do not change during the process. 4 mutually exclusive dummy variables "*Partners*" (including spouses), "*Relatives*", "*Friends*" and "*Strangers*" indicate the closest relationship a team member has to any other, in this order (Questions H8 and J2). "*Team size*" and "*Sole Proprietor*" are computed to indicate the initial number of founders in two alternative ways, where the second variable is a dummy to differentiate one-person firms from teams. "*No. of Exits*" and "*No. of Entries*" are time-changing covariates, increasing after every respective event.

Control variables

To capture the pure effects of the explanatory variables, other factors possibly relevant for success chances, individual's performance thresholds and outside opportunities are controlled for. These include indicators for human capital, such as years of education (Question H6), industry experience (Question H11), paid work experience (Question H20) and managerial experience (Question H21). Entrepreneurial experience is captured with the number of start-ups the individual has helped starting (Question H12) and owns (Question H13). Other demographics included are age (Question H2) and gender (Question H1). In the team-level analysis, the means of these values over all team members are used instead (except for gender). The financial commitment of each individual is controlled for by including the log of the total dollar amount of equity he or she has provided for the start-up (Question Q12). In the team-level analysis, the log of the sum of equity provided by all team members is used instead.

---insert tables 1, 2 and 3 here---

Of the 1214 teams in the PSEDII consisting of a total of 2092 entrepreneurs, 158 teams (and 255 individuals) are dropped because they do not report any activity at all, and thus never enter the entrepreneurial process how it is defined in this study.

Coefficients in the Cox regressions (Tables 2 and 3) reflect the relative hazard of the event of interest occurring at any point in time. A negative coefficient means a lower hazard compared to the baseline hazard, if the independent variable increases by one (Cleves et al. 2010). The coefficients for the time-varying covariates mean that the relative hazard decreases after a change in the variable: The significant ($p < 0.01$), negative coefficients on "*No. of Activities*" in both sets of models lend strong support for hypotheses 1 and 1a; after each activity completed, the hazard rate of an entrepreneur leaving the team decreases on average by about 5% [$\exp(-0.048) = 0.95$] from the baseline hazard. The hazard rate of the team disbanding decreases by 4% [$\exp(-0.037) = 0.96$]. Business planning (hypothesis 2/2a) has no significant impact, whereas receiving external funds (hypothesis 3/3a) does so in both model 2 and model 5 ($p < 0.05$).

The coefficients for categories of social ties seem close to the expected logic: The effect sizes are ordered from "*Strangers*", "*Friends*", "*Partners*" and "*Relatives*", with lowest likelihood of exit if the entrepreneur is a partner or relative of another team member. The estimated hazard rate for family member giving up is roughly at 45% of the level a previous stranger in model 3 [$\exp(-0.8) = 0.45$]. Models 3 and 7 are estimated both including sole proprietors in the sample (as the reference category) and without them. The "teams only" models ignore sole proprietors and estimate effects exclusively for entrepreneurs who actually have social ties to team members, whereas the others put them into comparison with those who have none.

While categories "*Partners*" and "*Relatives*" show similar effect sizes in model 3, "*Strangers*" are much more likely to give up in comparison, and "*Friends*" are located in between. The outcome thus supports hypothesis 4. Including sole proprietors yields an unexpected outcome: Previous strangers in a team are even more likely to give up than them, giving only partial support to hypothesis 5. Together with the inconsistent effect of "*Team Size*", the result for "*Strangers*" requires reconsideration of hypothesis 5a. It seems as if social ties need time to work their magic: Knowing a potential business partner in advance, to the point of selecting him or her into the circle of "*Friends*", can improve chances dramatically.

The hypothesized effects of exits and entries on the future of the venture are not found in the estimation. The coefficients point in the opposite direction as suggested, contradicting hypothesis 6 and 7. Since team entries seem to be associated with a higher hazard of disbandment in both specifications of model 7, it can be speculated that later additions are done

as a measure of last resort in hopeless cases, but there is no further evidence to support this claim.

Testing the proportional-hazards assumption based on Schoenfeld residuals reveals only minor deviations by some of the control variables, which should not affect overall results (Cleves et al. 2010).

Discussion

Threshold theory is used as a framework for integrating process characteristics and social ties as factors influencing entrepreneurs' exit decisions. Survival analysis is a suitable tool for empirical testing of the derived hypotheses; it utilizes the entrepreneurs' decision to give up as the dependent event. In this way, it incorporates the judgment of individuals most affected by the consequences of their decision and having the highest level of information about influential factors.

One of these factors is the expected success of the start-up. Unsurprisingly, completing start-up activities is associated with more committed entrepreneurs, less likely to opt for outside opportunities. The observation that teams as a whole behave in the same way underscores this result. In line with Carter et al. (1996), who find that successful start-ups tend to complete more activities than unsuccessful ones in the same periods of time, the findings further emphasize that completed activities are a useful measure for a venture's progress towards firm birth. This feature allows the constructed variable to be used as a proxy for success in the subsequent analysis, allowing clearer estimations of the effects of social ties.

The importance of business planning from the entrepreneurs' perspective is not obvious in the results; at least they do not show a significant reaction to a completed business plan. They rather do so after external funds are obtained, for which completing a business plan might often be a necessity (Honig & Karlsson 2004). Investors' funds allow an entrepreneur to stay independent of other sources of income. At the same time, they might do a good job in selecting committed teams, or apply mechanisms to induce commitment.

A take-away for entrepreneurs is that it matters with whom they decide to team up with. Given the same state of progress, founders with close social ties to their team members are much less likely to give up. 32% of all individuals in the PSEDII have a romantic relationship to a co-founder (Table 1), belonging to the category for which the effect is strongest. They as well as potential future entrepreneurs should be aware of the consequences. The decision to formally involve a family member or romantic partner comes with a tradeoff between psychic income and flexibility: One interpretation is that what at first sight looks like an opportunity to combine family and business, will turn out as a hurdle to switch to a different job later if things do not go well. The other interpretation is that even if things do not look well at times, having a trustworthy partner involved in the business will help to dive through these periods. In any case, founding with individuals from the close social network equals a higher commitment than founding alone. Many start-ups founded by spouses or family members may indeed represent "persisting underperformers" (Gimeno et al. 1997), with their performance thresholds not lowered by a lack of attractive outside opportunities, but rather by higher psychic gains and switching costs.

The results represent a more fine-grained picture of Ucbasaran et al. (2003), who as a part of their findings show that family firms are associated with fewer exits. Entrepreneurs should be aware that family support can also come from outside the formal boundaries of the firm (Brüderl & Preisendörfer 1998; Anderson et al. 2005). This could serve as a comforting fact in case they do not want to include close family members as owners of the start-up. Involving the

family network in such a way will have mixed effects - it is suggested that entrepreneurs "balance strong and weak ties and their respective benefits" (Arregle et al. 2013).

Even if a team is about to be split up, this does not mean harm. The remaining team's stability is not affected by exits of members. The loss of skills and social attachment going along with an exit, or the assumed interpretation of exits as "bad news" for success chances, do not play the hypothesized role. Other mechanisms seem to influence future success: For example, Chandler et al. (2005) find a positive association of exits and sales. In line with literature on management turnover, they argue that in case of exits often the worst performers are dropped from teams, resulting higher chances of success. For team entries, their findings could be helpful to explain the association observed in this study - entries are related to worse performance. Disruptive effects of adding members seem to overlay potential benefits, or adding members is a method of last resort when things go bad already. It remains a challenge for future research to disentangle cause and effect.

Limitations

Limitations of the study include possible endogeneity among the explanatory variables. Perhaps entrepreneurs who found with their spouses or family members are driven by entirely different motives that also affect their process characteristics. One study, however, did not find effects of "copreneurship" on business success in terms of profits (Dyer et al. 2013). Further, the study does not account for any quality or sequence of activities. Entrepreneurs should not believe that simply completing more activities leads to success - given the circumstances of the business, this might often not be useful or even possible.

Conclusion

This work analyzes entrepreneurial exit and team disbandment in context of the preceding process and the social ties among founders. It further attempts to find consequences of team changes on the survival of the remaining team.

For entrepreneurs, the results offer insights into benefits and risks of founding in a team with family members or partners. They should be aware that including them as co-founders equals a stronger commitment to the start-up. Depending on the circumstances, this could be problematic or even beneficial in case things do not go well: just leaving the project behind and turning to other occupations becomes less of an option.

Exit of a co-founder does not mean the remaining team is doomed; also, including new members is not a guarantee for stability. More detailed investigation on exact causes and effects of team member changes could reveal further insights.

For future research on the entrepreneurial process, the consideration of survival analysis as a tool of analysis is encouraged (Yang & Aldrich 2012). It has many advantages over logistic or linear regressions when addressing the dynamic nature of the process. As an example shown in this study, survival models give researchers a unique opportunity of including time-varying covariates.

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Table 1: Descriptive Statistics

Descriptive Statistics - Individuals (n=2092)

		mean	sd	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Partners	0.32	0.47	1.00													
2	Relatives	0.12	0.32	-0.25	1.00												
3	Friends	0.18	0.39	-0.32	-0.17	1.00											
4	Strangers	0.01	0.11	-0.08	-0.04	-0.05	1.00										
5	Sole Proprietor	0.29	0.45	-0.44	-0.23	-0.30	-0.07	1.00									
6	Age	43.13	13.16	0.08	-0.02	-0.09	0.02	0.04	1.00								
7	Woman	0.38	0.48	0.17	-0.03	-0.05	-0.02	0.03	0.01	1.00							
8	Years of Education	14.45	2.20	-0.01	-0.06	0.05	0.07	-0.03	0.21	0.02	1.00						
9	Industry Experience	8.38	10.30	-0.09	0.02	-0.01	-0.02	0.08	0.32	-0.17	0.05	1.00					
10	Work Experience	20.27	12.49	0.07	-0.03	-0.08	-0.01	0.05	0.82	-0.11	0.13	0.36	1.00				
11	Managerial Exp.	10.40	10.20	0.02	0.05	-0.06	0.00	-0.01	0.64	-0.08	0.23	0.34	0.66	1.00			
12	Start Ups Helped	0.99	1.79	-0.03	0.01	0.03	0.05	-0.01	0.26	-0.09	0.13	0.14	0.25	0.36	1.00		
13	Start Ups Owned	0.37	0.86	-0.04	0.02	0.09	0.05	-0.08	0.16	-0.08	0.13	0.05	0.13	0.24	0.56	1.00	
14	Equity	22345	98296	-0.03	0.02	-0.00	0.00	0.01	0.06	-0.07	0.11	0.08	0.05	0.11	0.07	0.04	1.00

Descriptive Statistics - Team means (n=1214)

		mean	sd	1	2	3	4	5	6	7	8	9
1	Team Size	1.73	0.97	1.00								
2	Age	43.29	12.05	0.00	1.00							
3	Years of Education	14.39	2.00	0.09	0.21	1.00						
4	Industry Experience	8.77	9.17	-0.04	0.32	0.05	1.00					
5	Work Experience	20.55	11.26	-0.01	0.82	0.13	0.36	1.00				
6	Managerial Exp.	10.31	8.92	0.05	0.64	0.23	0.34	0.66	1.00			
7	Start Ups Helped	0.97	1.54	0.02	0.26	0.13	0.14	0.25	0.36	1.00		
8	Start Ups Owned	0.32	0.68	0.10	0.16	0.13	0.05	0.13	0.24	0.56	1.00	
9	Equity (sum)	48027	400462	-0.01	0.06	0.10	0.07	0.05	0.10	0.07	0.04	1.00

Table 2: *Cox Proportional Hazards Regression: Exit of Entrepreneurs (n=1837, Standard Errors in Brackets)*

	Model 1	Model 2	Model 3	Model 3 - Teams only
No. of Activities	-0.048*** (0.008)		-0.048*** (0.008)	-0.056*** (0.010)
Business Planning		-0.017 (0.102)		
External Funding		-0.274** (0.131)		
Partner			-0.108 (0.121)	-0.790*** (0.212)
Relatives			-0.150 (0.192)	-0.801*** (0.249)
Friends			0.177 (0.144)	-0.427** (0.202)
Strangers			0.548*** (0.207)	reference (---)
Sole Proprietor			reference (---)	
Team Size				-0.017 (0.069)

Equity	-0.078***	-0.080***	-0.078***	-0.073***
	(0.011)	(0.011)	(0.012)	(0.014)
Woman	-0.158*	-0.135*	-0.107	0.002
	(0.081)	(0.081)	(0.085)	(0.106)
Age	-0.013**	-0.012*	-0.012*	-0.010
	(0.006)	(0.006)	(0.006)	(0.008)
Years of Education	0.021	-0.005	0.017	0.005
	(0.022)	(0.021)	(0.022)	(0.028)
Industry Experience	-0.012**	-0.011**	-0.013***	-0.015**
	(0.005)	(0.005)	(0.005)	(0.006)
Work Experience	0.012*	0.011	0.012*	0.012
	(0.007)	(0.007)	(0.007)	(0.008)
Managerial Exp.	-0.003	-0.005	-0.001	-0.001
	(0.005)	(0.006)	(0.005)	(0.007)
Start-ups Helped	-0.011	-0.016	-0.013	0.060*
	(0.035)	(0.036)	(0.036)	(0.036)
Start-ups Owned	0.011	-0.052	-0.008	-0.090
	(0.058)	(0.060)	(0.059)	(0.065)
Chi-Square	117.91	91.26	137.46	105.73
P > Chi-Square	0.000	0.000	0.000	0.000
Observations	4553	4553	4553	3105

* $p < .05$ / ** $p < .01$ / *** $p < .001$

Breslow method for ties

Table 3: *Cox Proportional Hazards Regression: Disbandment of Start-up Teams*
($n=1056$, Standard Errors in Brackets)

	Model 4	Model 5	Model 6	Model 7	Model 7 - teams only
No. of Activities	-0.037***		-0.036***	-0.038***	-0.052***
	(0.009)		(0.009)	(0.009)	(0.012)
Bus. Planning		0.123			
		(0.115)			
External Funding		-0.400**			
		(0.175)			
Team Size			-0.071	-0.633***	-0.667***
			(0.057)	(0.242)	(0.251)
No. of Entries				0.668***	0.683***
				(0.249)	(0.252)
No. of Exits				-0.485**	-0.254
				(0.195)	(0.174)
Equity	-0.100***	-0.112***	-0.100***	-0.097***	-0.090***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.017)
Age	-0.020**	-0.016*	-0.019**	-0.020**	-0.038**
	(0.009)	(0.009)	(0.009)	(0.009)	(0.015)
Years of Educ.	0.021	-0.003	0.020	0.019	0.033
	(0.031)	(0.030)	(0.031)	(0.031)	(0.041)
Industry Exp.	-0.017***	-0.017**	-0.017***	-0.017***	-0.040***
	(0.006)	(0.007)	(0.006)	(0.006)	(0.010)

Work Experience	0.025***	0.022**	0.024***	0.024***	0.049***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.016)
Managerial Exp.	-0.011	-0.015*	-0.011	-0.010	-0.011
	(0.008)	(0.008)	(0.008)	(0.008)	(0.014)
Start-ups Helped	-0.074	-0.080	-0.077	-0.078	0.035
	(0.051)	(0.051)	(0.051)	(0.051)	(0.080)
Start-ups Owned	0.080	0.061	0.089	0.102	0.059
	(0.101)	(0.100)	(0.101)	(0.100)	(0.139)
Chi-Square	88.05	82.06	88.76	99.97	90.27
P > Chi-Square	0.000	0.000	0.000	0.000	0.000
Observations	3414	3414	3414	3414	1919

* p < .05 / ** p < .01 / *** p < .001

Breslow method for ties

Within Family Finance: a phenomenological investigation

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Within Family Finance: A Phenomenological Investigation

Abstract

Investment into start-up enterprises by friends, family, and fools has often been referred to in academic and popular literature. Frequently assumed to be inefficient and economically irrational, research regarding more formal investment practices has dominated the literature. Yet, the behaviour is widespread and relatively common. This paper reports on research that examined the case where financial resources are provided to a close family member for the purpose of starting a business; within-family finance. The motivation was to understand why people engage in within-family finance for starting a new enterprise given that the chance of a positive financial outcome is low and a negative relational outcome is high. There were three key ontological aspects underpinning a conceptual framework to understand this. First, participants exhibited a deep level of concern to the world, their family and themselves. Second, they felt angst at the thought of not achieving all that they thought that they could be. Third, they showed a level of tenacity in pursuing their goals. Finally, using a phenomenological perspective, these three underpinning beliefs drive a need to live an 'authentic life'; the life where fulfilment and satisfaction is more important than the immediate fear of failure both in a business and personal sense.

Introduction

Start-up entrepreneurs require funds to establish their business. These funds come from various sources, one of which is close family members; invariably included in the 'three Fs' category: *friends family and fools*. The purpose of this research is to develop a deep understanding about the lived experience of people who undertake this activity. The problem is that we have no existing theory in the entrepreneurship or finance domains to explain why people provide and accept funds within the family in order to start new businesses. This is interesting because contemporary advice is that the chance of a positive return on investment is very low, and the possibility of a negative emotional outcome is very high. The aim of this research is to develop a conceptual framework that helps explain the phenomenon. The research question is: What are the influences on the motivations and behaviour in a within-family financial relationship that exists for the purpose of financing a new venture?

Literature

Four broad groups of fund providers to business start-ups are well addressed in the literature; business angels, venture capitalists, financial institutions such as banks, and granting bodies such as governments or NGOs. Business angels invest in high growth potential ventures as (mostly) individuals, where there hasn't been a previous relationship with the entrepreneur (Mason and Harrison 1995). Venture capitalists are institutional investment organisations investing on behalf of others, (Morris, Webb et al. 2013). Both look for capital gains, but often at different stages of business development. Financial institutions such as banks mostly provide debt finance, where the principle is repaid with an interest component. Gifts, through the mechanism of grants, are often targeted to meet certain policy or economic goals.

Risk equity provided by people who are known to the entrepreneur by way of family, friends, or other close acquaintances identified in the literature only relatively recently (Bygrave, Hay et al. 2003, Sorheim 2005). Research based on the GEM project (see www.gemconsortium.org) concluded that the size of informal investment from close family members, friends, and neighbours of the entrepreneur was as much as 1.1% of GDP worldwide. On average, 3.4% of the adult population of the surveyed countries were involved with informal investment in someone they knew. The size and importance of this type of financing has been confirmed more recently by Bygrave and Bosma (2011). In Australia, 3.3% of the adult population,

accounting for 1.26% of GDP, engages in informal investment behaviour and of all nascent entrepreneurs who receive some form of finance to start a business, 83% report that they received that funding from friends or family ([Duckworth and Quinn 2009](#)). Recent research using the Panel Study of Entrepreneurial Dynamics (PSED) data, ([Reynolds 2010](#)) revealed that of the sample of 830 respondents, 611 (74%) reported receiving financial assistance from helpers, otherwise referred to as friends or family ([Kotha and George 2012](#)). The size of this behaviour is significant. Further, Erikson, Sorheim, et al (2003), concluded that the behaviours and expectations of family investors were different to other investors.

Venture capital investment, by comparison, is insignificant in terms of activity but it is studied in great depth ([Rosenbusch, Brinckmann et al. 2013](#)). Similarly, business angels have received an increasing level of attention in the literature ([Mason and Harrison 2013](#)). Bygrave, Hay et al. (2003) and [Maula, Autio et al. \(2005\)](#) have both called for further research into informal finance that has been provided by individuals known to the entrepreneur prior to the investment.

There is scant literature that addresses within-family finance. What is known comes from a number of studies that address the subject from various other perspectives. One such view using systems theory suggested that the interaction of the family system and the business system provides an 'idiosyncratic firm level bundle of resources and capabilities resulting from the systems interactions' ([Habbershon, Williams et al. 2003](#)). Such interaction provides a resource bundle that is complex and valuable to the firm due to the idiosyncratic nature of the resource availability. This systems based view, referred to as 'familiness', has a significant presence in the literature ([Frank, Lueger et al. 2010](#)). It covers a number of theoretical views such as social systems theory ([Luhmann 1995](#)), social capital theory ([Pearson, Carr et al. 2008](#)), management theories ([Ensley and Pearson 2005](#)), marketing, ([Tokarczyk, Hansen et al. 2007](#)), family systems theory ([Rothbaum, Rosen et al. 2002](#)), and complexity theory that proposes that there are significant shortfalls in using systems theory without understanding the complexity of family and business ([Walby 2007](#)). Other authors have addressed the intergenerational financial structures of family business and found, once again, complexities that are not recognised in businesses that are not family owned ([Haynes, Walker et al. 1999](#)). The advantages of the family resources that are available to family owned firms have also been widely addressed using the resourced based view of the firm ([Sirmon and Hitt 2003](#)). These advantages include human capital, patient capital, survivability capital and family governance. These studies, using the family firm as a basis for their research build our understanding of the added complexity of family involvement in business ([Neubauer and Lank. 1998](#)). Much of the literature that addressed family resources within a business context is based on the resource based view (RBV) of the firm ([Wernerfelt 1984](#)). Internal capabilities or resources provide competitive advantage ([Barney, Wright et al. 2001](#)), thus, entrepreneur and funder experience that manifest themselves in attitude, social capital, and knowledge can be viewed as resources that potentially enhance the success of investments ([Shepherd, Armstrong et al. 2005](#)). These resources are often provided by family at the early stage of the business life cycle ([Bygrave and Bosna 2011](#)).

The family is recognised, although only relatively recently, not only as part of a family business system, but as an important enabler of opportunity recognition (OR) which will also influence decisions to commence business ([Steier 2007](#)). This perspective introduced a broader social constructivist meaning of the involvement of family, whether directly involved or not in the business enterprise. It has been proposed that an investor's level of opportunity recognition (OR) of an investment is also influenced by their entrepreneurial attitude (EA) ([Lindsay 2004](#)),

the social network in which they are embedded (Granovetter 1985), and their entrepreneurial self-efficacy (ESE) through the investment process. However, previous entrepreneurship research that focused on personality traits such as Locus of Control, Need for Achievement, and Need for Autonomy have been unsuccessful in explaining entrepreneurial behaviour (Gartner 1988). Entrepreneurship studied through the lens of OR (Kenworthy and McMullan 2013) is also based on a cognitive perspective (Baron 2004). Another cognitive approach to the investigation of entrepreneurship has shown ESE to have a positive effect on the likelihood of being an entrepreneur (Chen, Greene et al. 1998). Further work by (Glas and Drnovsek 2002) showed that the ESE instrument developed by Chen et. al. (1998) is personal and situational specific, but yet again developed through research on experienced and successful entrepreneurs. Research showed there were general similarities in the cognitive processes of experienced investors and experienced entrepreneurs (Lindsay 2002). However, no such assumption can be held for within-family finance, whereas the above constructs have been developed through studying experienced and, usually, successful entrepreneurs which is not assumed in this research. These theories, while being helpful in describing and explaining entrepreneurial behaviour fall short of explaining adequately the experience and meanings of the complexity of within-family finance. Few studies have engaged in entrepreneurship at this level (Cope 2011) and the cognitive based research approaches described here do not fill this gap.

Capital structure theories have been extensively used to explain and develop knowledge about how early stage businesses choose and structure their funding needs (Matthews, Vasudevan et al. 1994). There are four main theories which are often used to explain early stage capital structure decision by firms (Cassar 2004) and (Frielinghaus, Mostert et al. 2005), namely, Static Trade-Off Theory, Information Asymmetry Theory, Agency Cost Theory, and Pecking Order Theory. Static Trade-Off Theory, (Modigliani and Miller 1958, Myers 1984, Harris and Raviv 1991), predicts that firms move toward a point of ideal debt to equity ratio. This ratio is independent of the market value of the firm and life cycle stage. Information Asymmetry Theory (Ross 1977) offers a different approach to the Modigliani and Miller (1958) proposition where capital structure adopted by a firm's management sends a signal to the market that influences the valuation of the firm. Novice entrepreneurs are able to provide little, if any, of these artefacts to alleviate the problem (Wiklund and Shepherd 2003) and there is little evidence in the literature that this theory has been or could be applied to start-up firms. Agency Cost Theory is relevant when one entity engages another (principal and agent) to act for them in some manner (Jensen 1986) and costs are incurred to reduce the information asymmetry. Such constructs are widely assumed in a wide range of discussions regarding finance of new ventures such as venture capital (Shepherd and Zacharakis 2001), bank finance (Irwin and Scott 2010), business angels (Mason and Harrison 1995), and even bootstrapping (Lam 2010). There is no clear evidence that agency cost theory can assist our understanding of within-family finance. Pecking Order Theory proposes that there is uneven information between managers and investors. This provides another means of overcoming one of the limitations of the original Modigliani and Miller (1958) theory (Chirinko and Singha 2000). These theories hold at their core an assumption of a clear distinction of debt and equity in the mind of both the entrepreneur and investor. It is not clear that such rational choice is being made between family members; therefore, the capital structure theories are unlikely to provide a sound theoretical explanation of the motivations and behaviour of within-family finance. There has been significant research into family firms, and while this particular research in within-family finance is not directed at the family firm as an entity, there are some aspects that may be important to within-family finance. Where family firms have engaged in capital raising, we find that Agency Theory (Ross 1973) is a relatively common approach to theorising the funding behaviours of family

business (Siebels and zu Knyphausen-Aufseß 2012). This theory is, however, acknowledged to not hold because there are many other social aspects that will modify outcomes. Altruism has been proposed as being beneficial (Batson and Powell 2003) to family firms, and while there is a 'dark side' (Schulze, Lubatkin et al. 2003) overwhelmingly there is agreement that altruism has a positive influence on family firms (Eddleston and Kellermanns 2007) even though it may place restrictions on business growth and efficient allocation of resources. Agency Theory must therefore be modified significantly if it is to be applied to the family context. A recent attempt to integrate Altruism and Agency theories (Bygrave 2011) continue to use constructs that are anchored in an economic paradigm of choice between financial alternatives. There is no reference to how agency can explain within-family finance given the complex relationship and social construct within a family. If it is modified significantly by a family business, which is probably far more financially 'sophisticated' in its structure, there is even less chance of it being applicable to within-family finance that has no business financial structure and as the level of altruism decreases, agency issue increase (Bygrave and Bosna 2011).

Stewardship theories, which are rooted in a humanistic perspective, accept that some will behave in the interest of others. In the family context, interest of the collective family rather than the individual interest take priority (Pierce, Kostova et al. 2001). Further, a family firm that exhibits stewardship is more likely to be flexible and be better placed to respond to dynamic business conditions (Davis, Schoorman et al. 1997, Zahra, Hayton et al. 2008) and long-term perspectives (Davis, Schoorman et al. 1997). This theory assists us to understand the primacy of the relationship. It is not clear whether it is relevant to the within-family finance context. It does, however, indicate that a humanistic point of view may be valuable to within-family finance. There is growing evidence that the social network provides an important mechanism through which business venture investment is conducted and a focus on economic analysis alone provides an incomplete explanation of investment behaviour in early stage ventures (Shane and Cable 2002, Westland and Bolton 2003). This is particularly important when the investment is made within a family environment due to the added complexity evident in family business and the inherent filial obligations that are present (Neubauer and Lank. 1998). This is in contrast to 'rational' economic theory where the concept of exchange and the welfare of the self is principle motivator (Kohli and Künemund 2003). This contrast was highlighted by Titmuss (1971) where the motivations for giving blood of different groups of people, namely people in the UK and people in the USA were compared. Those in the UK, where no payment was made for donations exhibited altruistic motivations; whereas those in the USA, where payment was offered for donations, exhibited exchange motivations (Titmus actually thought that this was not donation, but supply).

Economic theories that focus on funding start-up businesses are often couched in terms of risk and return on investment and linked to exchange theory (the concept of reciprocity). This is the obligation to give back to others. Such concepts are widely used to explain how intergenerational giving occurs (Sadrieh 2003). Motives attributed by economists for such behaviour are often defined in terms of differential reactions to situational conditions, not in terms of psychological or sociological aspects (Kohli and Künemund 2003). Further, motivations within the family context are rarely simple and clear. There are overlaps and contradicting motivations at play which make development of models of behaviour difficult or irrelevant and result in a complex interaction amongst many motives. This is illustrated by two conflicting theories that have been used in explaining giving within the family context. Utilitarian principles of exchange theory propose that receiving more than one gives is

desirable, whereas equity theory proposes that receiving more than one gives results in feelings of distress and guilt, therefore undesirable (Gierveld and Dykstra 2008).

Motives for giving within the family context have been explained using altruism (Kimball 1987), exchange (Kotlikoff and Morris 1987), reciprocity (Gierveld and Dykstra 2008) obligation (Komter and Vollebergh 1997), evolutionary economics (Carmichael and MacLeod 1997), and contingency theories (Fingerman, Pitzer et al. 2010). Each of these theories, however, relies on the nature of the giving to be clear. For example, altruism is clearly a gift which has no apparent return (Titmuss 1971) yet, economists also recognise that giving may provide an intangible return such as ‘inner glow’ referred to as ‘Impure Altruism’ (Andreoni 1989). Exchange and reciprocity theories explicitly expect a return for the supply of some value. Evolutionary economics are predominantly concerned with population level analysis (Aldrich and Martinez 2003) and contingency theories are predominantly concerned with efficiency of organisations and effectiveness of structures within organisations (Drenth, Thierry et al. 2013).

In conclusion, the literature regarding financing new ventures is well established, but within-family finance at the early stage of venture formation is sparse. Research that examines family and family business and family finances show the diversity and complexity of the issue. It is evident that theoretical development that has been relevant to formal and informal financing has enabled us to understand that there are clear differences between different types of finances under different contexts and stages of the firm. We have a sound understanding of debt and venture capitalists, and a growing understanding of business angels embedded in a number of theories that explain rational and sophisticated investment decision-making. There are also a number of ways to explain family behaviour in the social and economic context. What we do not have is a theory or theories explaining within-family finance for the purpose of starting a business.

Research Method and methodology

This research looks at the meanings attributed by the people involved in within-family financing due to the complexity of the phenomenon. This research, therefore, is ideally suited to a social constructivist approach because it’s ‘social realities are socially constructed’ (Crotty 1998 p 55). Phenomenology was chosen as an appropriate research framework within the social constructivist view due to the nature of the investigation required to answer the research question. Phenomenology is the examination of a phenomenon from the perspective of a number of participants (Moustakas 1994). Phenomenology is, at its most basic premise, an examination of ‘the things themselves’ (Crotty 1998 p78). There is an assumption under this methodology that human beings are both aware of the objects about which the research is about, as well as an assumption of intentionality. Husserl proposed that all human thinking is intentional (Willis 2001). That is, there is a decision-making process, a meaningful engagement, that at its base results in an affirmation that there is a connection that exists between the intentional consciousness toward something and the meaning (thinking) of that object (Husserl 2001 p193) about which the phenomenon is embedded. A constructivist view is that we can (and should) engage with a phenomenon to make sense of it. The aim of a phenomenological research study is to uncover the essential understanding, to identify the description that best conveys the essences and actions of consciousness (Sadala and Adorno 2002). The phenomenological interview attempts to ‘understand themes of the lived everyday world from the subjects’ own perspectives’ (Kvale and Brinkmann 2009). It is close to a conversation, rather than a structured interview yet has a purpose and as such will be semi-structured. The interview participants were chosen on the basis that they had firsthand

experience of the phenomenon. Interviews were conducted with people who have invested in family and people who have received investment from family. Polkinghorne (1989) suggested that between five and 25 individuals who have experience of a particular phenomenon under investigation is a suitable basis for interview data collection. 16 participants were selected for this research. The methodological techniques used ensure sufficient depth of material to allow a meaningful and deep understanding of the phenomenon. It allowed each participant to 'be heard' and placed within the larger context (Miles and Huberman 1994).

The method to analyse the data was informed by the Stevick-Colaizzi-Keen Method as adjusted and modified by Moustakas (1994). This was deemed to be robust and well accepted by a number of texts that address phenomenological methodology including Patton (2002), Creswell, Hanson et al. (2007), Berglund (2007), Seale (1999), and Bazeley (2007). The initial analysis was first level coding using elemental (Saldaña 2009) and exploratory pattern (Miles and Huberman 1994) coding techniques. Major issues were identified and initial codes created. Within these broad methods, elements that were included in the coding schema included affective codes that related to emotion and values where attitudes and beliefs were identified. This was done for all the interviews resulting in 345 distinct nodes. Second level coding used focused axial coding techniques specifically looking for properties and dimensions of themes, ambiguity and overlap. This resulted in a list of main themes with tree structures and an understanding of the interrelationships between codes. Subsequent revisions of the coding scheme continued until a full understanding of the phenomenon had been reached. The process was messy and non-linear; much checking of the written transcript against the audio and memos was made to ensure that the correct meanings and interpretations were being attributed to what was said. After coding, textural statements that used verbatim quotes identifying key meaning units were constructed in a tabular format. This process resulted in 6 high-order themes; Choices, Consequences, Funding, Relationship, Repaying, and Risk.

Using imaginative variation, a description of the experience was constructed for each participant. These statements capture the situations, conditions and relationship aspects of the interview. Finally, a description of the experiences of the participants as a group is derived from an integration of the textural and structural statements. This composite textural-structural statement identified, from themes, the meanings, and essences of the experience of the phenomenon. This stage in the data analysis process reveals the common and divergent meanings and deep understanding of the phenomenon from the perspective of the participants and researcher.

Findings

Three fundamentally important aspects of how the participants in this study present their view of the world they inhabit became evident through this reflection. The three aspects are phenomenological in nature and are labelled; Care, Angst, and Tenacity. They are about deep meanings and are not psychological traits. They are more than attitude; they are based on a life-view of the world. They represent how people see themselves in a world where they exist, and can only know the world from their existence, from their viewpoint, from their own existing knowledge base. They are ontological rather than ontic. Phenomenological research is a reflective discipline (Manen 1990), and requires an intuitive and integrated reflection of the related stories of the participants' meanings (Moustakas 1994). Insight to the whole of the data, rather than any particular part of it was revealed through this process.

Care

I will commence with Care. To help understand what I mean by this term, I include a story that Heidegger used to explain the ontological concept of care (Heidegger 1962 p242).

Once when 'Care' was crossing a river, she saw some clay; she thoughtfully took up a piece and began to shape it. While she was meditating on what she had made, Jupiter came by. 'Care' asked him to give it spirit, and this he gladly granted. But when she wanted her name to be bestowed on it, he forbade this, and demanded that it be given his name instead. While 'Care' and Jupiter were disputing, Earth arose and desired that her own name be conferred on the creature, since she had furnished it with part of her body. They asked Saturn to be the arbiter, and he made the following decision, which seemed a just one: 'Since you, Jupiter, have given its spirit, you shall receive its spirit after death; and since you, Earth, have given its body, you shall receive its body. But since 'Care' first shaped this creature, she shall possess it as long as it lives. And because there is now a dispute among you as to its name, let it be called 'homo', for it is made out of humus (earth).

This story provides an insight into Heidegger's ontological, rather than ontic basis of the term 'Care'. Saturn, the god of time is instrumental in this story. Time for humans is core to their life-world but is overlooked by much of Western cultural traditions (Scott 2010). Care is a fundamental aspect of this authentic lived world, and 'The ways we care and what we care for govern our lives to a considerable degree' (Scott 2010). Care is, therefore, about oneself as well as others in the world. Following is an example from the *Choices* theme:

Now with my family I will invest because I want to help them

Both Trust in the theme *Relationship* and Obligation in the theme *Repaying* have a reciprocal aspect. The care that is revealed within the dialogues of this study shows a gratefulness for, and appreciation of, the care shown to them. There is also a strong sense of caring for others, and a mindfulness that Care is given as well as taken.

I feel very blessed that my parents are willing to do that... so I feel very blessed but at the same time I feel very committed to help them have the life they have been working for

And a number of participants expressed how obligation resolves itself within this concept of Care, the need to be aware of and fully engaged with the concern of others:

Q: So it's an obligation from your perspective rather than from your sister?

A: ...she kind of laughs it off and says 'that's fine'. So definitely from my side

Q: So from their perspective there's no strings attached but from your perspective there are?

A: Yeah I don't call that a string though I call that just my obligations as mine.

Care manifests itself in the discussions that revolve throughout the *Funding* and *Repayment* themes. A level of diligence becomes evident in how the participants addressed this aspect – a diligence of making sure that the obligation is attended to. Repayment is beyond the simple action of repaying money provided. It is an emotional repayment, a deeper need to have not only the money repaid, but the trust and belief validated in some way. This is where we see that the participants not only see themselves as being-in-the-world, but doing so in a world of others, not simply as other objects, but as others who they care for and are cared for. This is where the ontic notions of care, the manifestations of care reported by the participants, reveal the ontological Care, the underlying philosophical basis of the phenomenon under investigation expressed as empathy for all concerned:

I want to be successful, one just for myself but also to repay them and then give them something else as well. So if I can give them, you know, I mean if I can repay that and give them more I'd be happy to do so. It's not interest it's more.

And the activity is not seen as an obligation as much as:

it's a pleasure to us to be able to help them, there's no other reason. I suppose it's basically just gone on a gut instinct and a feeling that yes, we will get the money back. It might not be for quite a while but she'll come up with it. And having - probably in a way by not questioning her, it's sort of like telling her that we've got faith in her and that she can do this.

This was seen with those who received money and the Care that was exhibited by them towards their funders (as seen in the *Funding* theme) but particularly when we listen to the funders, who through the concept of temporal mortality, and the dedication to the future, showed Care in the authentic life concept. Beyond worldly things, beyond the rational return on investments, beyond the daily living of inauthentic lives:

that money really is an enabler, not for what it is...exactly, it's not an end in itself, it's a way to get to where you want

From a sociological point of view, 'I have been repeatedly struck by the attachment most people feel to their families' (Mackay 2010 p152). Care can be seen as the desire to belong within the family context and Mackay (2010) proposed that such a desire was a very strong driver of our behaviour. 'We are often more easily galvanised by someone else's need than by our own' (Mackay 2010 p132). So while there is a clear phenomenological basis for Care, the concept is accepted in other fields such as sociology.

Angst

Throughout the discussions with the participants, there was evidence for a sense of fear about the possible negative outcomes. However, there was also an underlying feeling that not to go ahead with the business, and not accept money from family held a deeper, more profound threat. The fear of the immediate was not as strong as the angst of not fulfilling the dream of business ownership. This Angst is a higher perceptual order, future oriented feeling or mood, rather than fear of something specific. Fear is the feeling that one may experience when threatened by something whereas anxiety, Heidegger argues, is a mood that is not easily located, that leaves a feeling of incompleteness and not being 'all that one can be'. Anxiety 'Is something like a haunted spirit that seems to whisper, as though to itself, Better take care...it's coming to pass...you come from nowhere...where are you headed...who are you?' (Scott 2010 p65). In this context, Heidegger's anxiety is the basis of nothingness (Åsvoll 2012). This is proposed as a motivational factor for pursuing an authentic life, one in which an individual will persevere to be all that they can be, rather than the alternative which feels like nothing. This same essence could be akin to Merleau-Ponty's concepts of Temporality and Freedom (Macann 1993).

Angst, or the feeling (mood) of not being all that one could be in the future appeared across various themes. For example, the theme *Choices* revealed many instances where Angst played a role in the decisions entrepreneurs and their financiers made. Another example was the theme *Repaying* where there was consistently more emphasis placed on being successful in repayment of the trust shown (also found under *Funding* and *Consequences*) because the immediate trepidation of not repaying is eclipsed by the *Relationship* which is long lasting and far more important.

Yep it's stressful, because in the back of my head you know I've always worked right from as a teenager, so my parents have always encouraged me to work hard and so it sounds great to be able to say, look mum can I have 50 thousand dollars or whatever the amount is, then they give it to you back. It's not in my personality or it's not the way they taught me to just take money off people.

This feeling of Angst, of the terrible possibility of not being all that one can be is strong enough to drive the entrepreneur. Even though they were not brought up to accept money from others, even though there was a genuine concern about accepting money from his parents who were not wealthy, the possibility of Nothingness (Åsvoll 2012) is revealed through the fact that he still accepted the funds. It is in the mood and manner in which these participants all recall the possibility of not being what they perceive that they can be that truly reveals the concept of nothingness.

I get the feeling then if my parents hadn't been there, then I probably would have put the business on hold

The drive that some of the participants showed to overcome the Angst of not achieving their aims were often expressed as a feeling or belief. It was a level of determination that overcomes the primary fear of the ability to repay the money that is provided by their family.

So you've got a belief which reduces the feeling of obligation because you know it's just going to happen....I think belief (is the) most important things in business, in the business success ... believe in what you do

The drive to achieve something (avoiding Nothingness) was evident from a participant who was very aware that he needed a change in career. Even though he was a successful physiotherapist with international experience, he needed to do something that held more meaning for him. The future time perspective becomes important in understanding the motivation to achieve today for the benefit of tomorrow, and these examples show how 'contexts orient people toward those future consequences' (Simons, Vansteenkiste et al. 2004). Another participant went on to say that:

When they (family) said yes (to the money) I was real happy because then you know, we knew we could do something

One of the participants was passionate about organic food and saw the opportunity to enter the business. She didn't have the finances needed, so asked her husband's parents. Doing so created significant stress for her, but the thought of missing the opportunity to be what she thought she could be was too powerful and overcame the fear of asking for money.

And I just felt really – like as I couldn't look them in the eye. I felt really, really bad about it because it was almost like the fact that we had to ask for that money.

But, the overriding passion was stronger:

it's not going to happen just because things happen, you actually have to do something in order to believe that it's going to happen, or have a plan, how it's going to happen and take some actions, ... I knew I'm going to get in, I believe in that,

The participants in this study all had a heightened sense of obligation, responsibility, and a certain level of anxiety about the ability to repay (in money or success) money provided to them from their family. Participants are quite clear about their fears. These were spoken about in terms of not repaying those who provided money to them and of letting them down. Angst, however trumps this feeling. These entrepreneurs and their family financiers certainly feel the need to be in the world, to be in a decision-making paradigm that takes control and moves toward a life that could be, rather than the alternative of nothing.

Tenacity

There is a determination, resoluteness, deep desire, and a passion, to do something in order to address the future. This is seen from both the entrepreneur and family financier. Tenacity, when used as a construct to explain entrepreneurial behaviour has been proposed as a predictor of entrepreneurship through measurements with perseverance (Duckworth and Quinn 2009) and action orientation and persistence (Hmieleski and Corbett 2006). Another individual construct is proposed to illustrate that tenacity or perseverance is the, 'ability to sustain goal-directed action and energy when confronting difficulties and obstacles that impede goal achievement'

(Morris, Webb et al. 2013) and is presented as a part of a set of competencies that entrepreneurs exhibit. These approaches have been based on individual, psychological scales. The difference between the trait-based approach illustrated above and the phenomenological meaning of tenacity is seen from the perspective of the resolve for an individual to achieve a future that is beyond the immediate. This implies the individual has a deep need to do something beyond simply persevering to achieve an immediate task. It is the complement to angst, discussed earlier. Tenacity arrives with the realisation of an urgency to achieve whatever it is that creates angst. Whereas persistence is in response to a specific task, Tenacity, rather than responding to, sits alongside Angst and is purely a consciousness; ‘when the call of conscience summons us to our potentiality-for-Being, it does not hold before us some empty ideal of existence, but *calls us forth into the Situation*’ (italics in original) (Heidegger 1962 p347). In fact the concept of resoluteness is firmly embraced by Satre in his discussions about personal unlimited responsibility for oneself (Macann 1993).

Much evidence illustrating tenacity is found in the theme, *Choices*.

it's not going to happen just because things happen, you actually have to do something in order to believe that it's going to happen, or have a plan, how it's going to happen and take some actions, ... I thought I'm going to do it tonight and I'm going to get it

There were significant aspects of temporality and the perception of the future, evident in themes such as *Repaying*:

The only reason I couldn't pay it off is if I became sick or died or something like that and I couldn't do it.

and in *Consequences*,

To actually really get it done now, because somebody else that's very close to me has invested in it

There were a number of examples in the study where there was an underlying belief that there was ‘something’ that needed to be achieved, and even though the *risk* of within-family finance was acknowledged, the perseverance needed to fulfil the deep desire to achieve was very much evident:

I kind of instinctively knew that I could make it happen...Everyone can try, I believe to just do it and see. I think people are in general are scared a little bit.

Resoluteness was more often expressed in the context of *repaying* the obligation felt for support from family. This was tied to the firm belief that there was a need to repay, greater than the need to repay money, but a tenacity to repay the trust and that repayment was by fulfilling the need to succeed.

... but I'll take care of them ... they'll get something back. They've given everything for me to be able to do what I need to do and then once I'm in a position to be able to do so, I will pay that back.

This tenacity is also evident with those who provide the funds. This takes a form that is very much in the Heideggerian concept of ‘being toward death’ and that help must be provided now rather than later.

Q. They're just giving you your inheritance early?

A: That's what they said. If we can help you now we'd rather do it now than when we go there's going to be nobody to help you

Tenacity is clearly evident from this perspective. There is an intense feeling of being in the world, the world of others, not just oneself. This connectedness with others manifests itself in a sense of urgency with which the participants expressed their desire to either help, or repay the help they received.

I mean there have definitely been times where you're looking at all your bills and thinking ‘Shit – I that's a monthly thing that we are paying’ and yeah sort of feeling a bit of pressure. Yeah, obviously because they have an (impact on how I pay) Mum. But

that whole – you know they sort of put their faith in you – ‘you can do this’ and all that kind of stuff and then you think ‘Oh can I do it?’ or ‘am I going to be able to meet these commitments that I’ve got?’ so that that initial time – no – didn’t feel any pressure at all – only later.

In this sense, Tenacity is the manifestation of the conscious decision to act on Angst, and taking Care with others (and oneself) in order to achieve life’s possibilities. ‘This makes it entirely plain that when the call of conscience summons us to our Potentiality-for-Being, it does not hold before us some empty ideal of existence, but *calls us forth into the Situation*’ (Italics in original) (Heidegger 1962 p347).

Authentic Life

Considering the essence of the phenomenon, Care, Angst, and Tenacity; aren’t these universal characteristics of humankind? Not in the context of modern Western philosophy (Comte-Sponville 2003, Russell 2008) nor in the context of sociology (Mackay 2009). These are aspects that are certainly not evident everywhere or with everyone. The authentic life, as Heidegger terms it is something to strive for, but not often done so. An authentic life is one in which one may ‘remain affirmatively alert’ to the possibility of life (Scott 2010). Hugh Mackay (2009) observed that investing in our economic future is worthwhile, but quite different from simply buying shares on the stock market. He goes on to suggest that this *authentic* investment shows an investor’s faith in the future and in the integrity and potency of the enterprises they choose to support’. A virtuous life requires conscious engagements with the way we live our lives in order that we should ‘try to understand what we should do, what we should be, and how we should live, and thereby gauge, at least intellectually, the distance that separates us from those ideals’ (Comte-Sponville 2003). The essences of the motivation and behaviour of within-family financial relationship that exists for the purpose of starting a new venture can be framed in the concepts, Angst, Care, and Tenacity. Each theme and every meaning that makes up those themes can fit into these three aspects. In our Western culture these tend to be left behind in the pursuit of everydayness, of instrumental aims and goals, of normative ethics, of following norms, rules and the usual. Those who embrace the authentic life will break with such normalisation and embrace something deeper. In the words of Hugh Mackay (2009), ‘That’s participation; that’s engagement; that’s investment’.

Conclusion

The purpose of phenomenological research is not to ‘discover’ causality, nor arrive at correlations between factors. Its value is to enable a deep engagement with people to develop a joint meaning and understand the essences of human lived experience. Knowledge is socially constructed and co-developed with the research participants. Phenomenology provides the close link between knowledge and understanding. By examining the meanings that are created in the phenomenological research process, the underlying essential aspects of the phenomenon are revealed. We understand the bare minimum yet essential components. If one component is missing, there is an incomplete picture, but components that are superfluous do not add to the understanding. When both the entrepreneur and their family financier see the world in terms of Care, Angst, and Tenacity within-family finance is likely to be a positive experience. As a result of this research, our ability to engage with such activity should now be able to be more compassionate and meaningful. Rather than decry such behaviour as ‘uneconomic’, ‘risky’, ‘irrational’; we should see it as a manifestation of the family, of future orientation, of trust and obligation, of hope, of trying to be all one could be, of investing in people rather than things. The theoretical outcome from this research shows how people experience this phenomenon through pursuing an authentic life.

This research has contributed to the body of knowledge through the development of a conceptual framework that assists in the understanding of the influences on within-family finance. The contribution is multi-layered and consists of contributing to our understanding of the meanings evident from the analysis. Importantly, it contributes to the growing use of new cultures of inquiry in entrepreneurship. It is important to the entrepreneur in that this form of finance does not simply replace other forms of finance; it is about relationships. For entrepreneurship educators, there is a new layer of complexity that should be included in addressing new venture start-ups, and investors need to understand what has transpired for an entrepreneur to have reached the stage at which they are ready for formal investment. Policy makers may note this behaviour will occur no matter what, and if encouraging entrepreneurship is deemed important, the phenomenon is now understood and can either be embraced or ignored. When an entrepreneur is lacking finance to start a business, and the family see the world through the lens of the theoretical perspective presented by this research, an authentic life, within-family finance is not only likely, it is probable, and it can be a positive experience for all.

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Conceptualizing the Role of International Entrepreneurial Culture, Internationalization Strategy and Strategic competencies on Performance of Born Global Firms

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Conceptualizing The Role Of International Entrepreneurial Culture, Internationalization Strategy And Strategic Competencies On Performance Of Born Global Firms

Abstract

Existing approaches at explaining entrepreneurialness of born global firms are under presented as they do not capture all aspects of international entrepreneurial oriented constructs influencing international performance of those firms. This study, therefore, contributes to the extant literature by advancing the notion of international entrepreneurial culture (IEC), incorporating a new dimension – international opportunity orientation (IOO) – into the IEC scale. The aim of this study is to develop a novel conceptualization with regard to entrepreneurialness of BGs. For this purpose, it discusses the role of three main constructs of international entrepreneurial culture (IEC), Internationalization strategy (IS) and strategic competencies (SC) on international performance of BGs. This study develops several propositions and offer discussion.

Key words: International Entrepreneurship; Born Globals; International Entrepreneurial Culture; Internationalization strategy; Strategic competencies

Introduction

Recent attention of entrepreneurship research focuses on the domain of international entrepreneurship (IE), defines as “[a] cross-disciplinary field combining international business and entrepreneurship” (Mainela, et al., 2014, p. 105). Due to several favorable changes and developments in international trade & business and emerging concepts like ‘global village’, ‘borderless world’, a growing number of firms seem to be operated internationally. As a result of this, recently, the emergence of early and rapidly internationalization firms – born globals (BG) (Rennie, 1993; Knight & Cavusgil, 1996) – has become extremely significant in international businesses and international entrepreneurship research studies (Chun, et al., 2014; Jantunen, et al., 2008; Oviatt & McDougall, 1994; Melen & Nordman, 2009). These firms operate internationally from its inception or soon after the inception, gain their competitive advantage from the use of their resources and the sale of their output in distant and multiple countries (Oviatt & McDougall, 1994). Therefore, they are challenging the traditionally internationalizing firms, following the slow and incremental internationalization process, and hence BG prefer to use hybrid structures and base their operations on networks instead of hierarchical structures (Jantunen, et al., 2008).

As Kuivalainen, et al. (2007) argues with the support of an increasing amount of evidence that entrepreneurial firms are focusing on rapid internalization, regardless of the facts of being small, resource constraints and their level of development. In that context, born globals are generally entrepreneurial in nature and characterized with several other unique characteristics in common, such as, produce unique products and services, adopt a proactive international strategy and are specialized and niche-oriented. Accordingly, “entrepreneurialness” of these firms is robust and hence, BG and entrepreneurship are inseparable phenomenon in IE studies. It is increasingly recognized that entrepreneurial opportunities are at the heart of entrepreneurship (Davidsson, 2004; Shane, 2003; Short et al., 2010). Eckhardt & Shane (2003) and hence in IE (Oviatt & McDougall, 2005). Thus, opportunity seizing entrepreneurial behavior is one of the most essential act for born global firms. Being entrepreneurial, BG firms focus to recognize opportunities by entering the international markets.

Research Rationale

There has been a growing interest in BGs as a novel phenomenon in IE domain (Chun, et al., 2014; Weerawardena, et al., 2007). Despite extensive research, the BG phenomenon is still under explained (Weerawardena, et al., 2007) and hence, theory and practice are still developing (Gabrielsson, et al., 2008). Earlier studies of born internationals (BGs) mainly focused on its emergence and the process of their early internationalization (Chun, et al., 2014; Rennie, 1993) and are widely studied. Moving the focus, recent studies captures the different aspects of BGs, such as drives influencing early internationalization (Weerawardena, et al., 2007; Hennart, 2014; Kaur & Sandhu, 2014), entry modes of BGs (Melen & Nordman, 2009; Kuivalainen, et al., 2012; Gleason & Wiggenhorn, 2007), internationalization strategies (Jantunen, et al., 2008; Kuivalainen, et al., 2012) and effects of entrepreneurial oriented behavior (Dimitratos, et al., 2012; Gabrielsson, et al., 2014). But it is with little research attention on developing constructs needed, in terms of, investigating the firm level entrepreneurship of BGs, developing constructs of international entrepreneurial culture how managerial decision making and degree of born-globalness affect BG performance and opportunity seeking behavior of BGs (Dimitratos, et al., 2012; Oviatt & McDougall, 2005; Gabrielsson, et al., 2014; Kuivalainen, et al., 2007; Jantunen, et al., 2008). Thus, the field lacks a rich theoretical base in developing comprehensive conceptual frameworks and constructs. In particular, though, ‘entrepreneurialness’ is central to BGs, studies on international entrepreneurial orientation and opportunity seeking behavior of BG are lacking and under-addressed in IE domain. Therefore, more dimensions of international entrepreneurial orientation are required to investigate ‘entrepreneurialness’ of BGs along with opportunity seizing behaviour.

Thus, this study uses the concept international entrepreneurial culture (IEC), developed by (Dimitratos & Plakoyiannaki, 2003), but with few modifications, in order to examine entrepreneurial oriented behavior of BGs towards their international performance. Addressing these concerns, the aim of this study is to present a comprehensive novel conceptualization to assess the role of the notion of IEC in international performance of BGs.

This study contributes to the extant literature in various ways. Firstly, it uses the notion of IEC, incorporating the dimension of international opportunity orientation to the IEC scale, in BG domain. In particular, this study proposes the relationship between international entrepreneurial orientation (IEO), international networking orientation (INO), international learning orientation (ILO), international market orientation (IMO) and international opportunity orientation (IOO) and international performance of BGs. Further it proposes the multi-dimensional effect of IEC on BGs’s international performance. Secondly, it proposes the moderating effect of two internally focused variables – internationalization strategy (IS) and strategic competencies (SC) – on IEC-performance relationship of BGs. Extant literature has widely studies the moderating effects of externally focused variables. But, the studies focusing the moderator effect of internal variables such as strategic and managerial competencies, leadership styles, organizational structures are with little attention (Wales, et al., 2011). Thirdly, the proposed model is suggested first time in the context of Sri Lanka in relation to ICT/BPO exporters. The ICT/BPO sector has been recognized by various policy makers as a promising services export sector, having a greater potential growth and a greater possibility of expanding the market share and exhibits the features of BGs. But their performance is gradually dropping since 2009 while all other industry rivals in the South Asian region are growing at a double digit rate, albeit this sector has been identified as a promising export services sector in accelerating the economic growth of the country. According to the authors’s knowledge, no prior empirical research has been conducted in addressing this issue in this context.

Theoretical Perspective

The process of internationalization of firms first appear in the field of international marketing since the late 1960s (Persinger, et al., 2007; Aspelund & Moen, 2012). The Uppsala Internationalization Model (U-M) and the Innovation-related Internationalization (I-M) Model are considered as the two main stage-method models which describe the internationalization process of firms (Madsen & Servais, 1997). According to two stage model theories, the internationalization of traditional firms is a gradual process which follows a slow and an incremental process (Madsen & Servais, 1997).

However, those traditional theories of internationalization do not adequately describe the process of internationalization of early and rapidly internationalized firms – BGs (Oviatt & McDougall, 1994; Persinger, et al., 2007). Unlike traditional firms, engage in international business operations, these firms follow early and rapidly internationalization process and thus they follow hybrid structures. Born global firms, therefore, challenge traditional internationalization theories (Weerawardena, et al., 2007).

Thus, the emergence of the firms against for conventional internationalization calls for a need of a novel conceptualization of their process of internationalization which provides new theoretical explanations and insights into the process of early and rapidly internationalization of born global firms. Though the conventional two stage model theories of internationalization do not adequately explain the internationalization of born global firms, it should not be forget the contribution received from those theories in conceptualizing the new theories of the internationalization of born global firms. However, according to extant literature, the network approach to internationalization, resource-based view (RBV), dynamic capability view, organizational learning theory and knowledge-based approach to internationalization have contributed to develop the theoretical perspective of the internationalization process of BGs.

Conceptual Foundations

Early research on BG domain was limited to few dimensions of entrepreneurial oriented behaviour such as international entrepreneurial orientation (IEO) and international marketing orientation (IMO) (Dimitratos, et al., 2012; Gabrielsson, et al., 2014; Knight & Cavusgil, 2004). Recent literature suggests the importance of including several other dimensions of entrepreneurship and international business constructs in order to comprehensively understand the international ‘entrepreneurialness’ (Gabrielsson, et al., 2014) of BG firms (Dimitratos, et al., 2012; Rauch, et al., 2009; Gabrielsson, et al., 2014). As a result of this, a novel concept of IEC was first introduced by (Dimitratos & Plakoyiannaki, 2003; Gabrielsson, et al., 2014) and defines IEC as, “the organizational culture which facilitates and accommodates the entrepreneurial activities of the firm in international market place” (p.193). IEC is a comprehensive phenomenon and more than entrepreneurial orientation as it captures both the dimensions of entrepreneurship and international business. Therefore, considering the importance of IEC in BG domain, this study has identified IEC as one of key antecedents of international performance of BGs. Further, IEC scale has been developed by incorporating a new dimension – international opportunity orientation (IOO) – which exhibits the opportunity seizing behavior of BGs. It is increasingly recognized that entrepreneurial opportunities are at the heart of both entrepreneurship (Davidsson, 2004; Shane, 2003; Short, et al., 2010) and international entrepreneurship (Oviatt & McDougall, 2005).

Despite the importance of the main role of IEC constructs in international performance of BGs, some studies have found insignificant impact of entrepreneurial orientation constructs on international performance (Wales, et al., 2011). Thus, IEC is not the only predictor of international performance. Under this vein, when and why EO (IEC) matters (Lumpkin. &

Dess, 1996) is the recent concern in IE research domain (Wales, et al., 2011). The role of IEC in international performance is influenced by several other variables that are in the form of either as moderator variables or as mediatory variables. Moderator variables concerns the conditions under which IEC is influential, while mediatory variables focus the why a particular relationship is possible.

Thus, this study proposes to examine the moderator effect on IEC – Performance relationship. Many moderator variables, studied in extant research, are externally focused variables and environmental variables, societal cultural variables and networking variables are widely studied in this regard. But, the studies focusing the moderator effect of internal variables such as strategic and managerial competencies, leadership styles, organizational structures are with little attention (Wales, et al., 2011). However, internally focused moderator variables are more important than externally focused moderates. This is mainly because, if managers do not properly manage entrepreneurial decisions and acts, IEC alone may not lead entrepreneurial firms to their success (Covin, et al., 2006). Thus, this study concerns internally focused two moderator variables, influencing IEC – Performance relationship, namely as strategic competencies (SC) and degree of born globalness (DBG).

IEC is a novel phenomenon in IE domain and hence, IEC-performance relationship of BG firms are with little attention. This study acknowledges the pioneering research studies, for example: (Dimitratos, et al., 2012; Gabrielsson, et al., 2014), in conceptualizing IEC in international performance of BGs. But, a more comprehensive conceptualization is needed in order to understand the role of IEC in international performance of BGs. Despite the growing interest in BGs, research studies, investigating the role of managerial decision- making is scarce (Jantunen, et al., 2008). Thus, it requires the inclusion of more insights with potential moderators. This study, therefore, proposes to integrate a moderating variables – internationalization strategy and strategic competencies – into its conceptual framework to complement the direct IEC-performance relationship of BGs. Figure 1 illustrates the relationship of these core constructs.

Development of conceptual framework and key propositions

International Entrepreneurial Orientation (IEO)

The concept of EO was first recognized by (Miller, 1983) and then (Covin & Slevin, 1991), at the first time, conceptualized a theoretical model, emphasizing the antecedents, outcomes of and moderating effects on EO-performance relationship. This theoretical conceptualization was empirically supported by various scholars in their studies. For example Wiklund, (1999); Zahra and Covin, (1995) have found that firms having more entrepreneurial orientation perform better than that of firms, focusing low entrepreneurial orientation. According to (Miller, 1983; Covin & Slevin, 1991) EO consists of three dimensions of innovativeness, proactiveness and risk-taking behaviour. But in few years later Lumpkin. & Dess, (1996) developed five dimensions of EO construct, adding two new dimensions of competitive aggressiveness and autonomy.

As Covin & Mille (2013) assert, the notion of EO has been greatly contributing in developing theory and practice in the field of IE since its beginning. This is clearly elaborates by (McDougall & Oviatt, 2000) in their definition of IE as “...a combination of innovative, proactive, and risk-seeking behavior that crosses national borders and is intended to create value in organizations” (p.903). Thus, Freeman & Cauusgil (2007) defines IEO as “the behavior elements of a global orientation and captures top management’s propensity for risk-taking, innovativeness and proactiveness” (p.3). Further Wiklund & Shepherd (2005) stress that adopting an ‘entrepreneurial orientation’ may benefit business firms to find out new opportunities for their survival and growth in the industry in order to face the uncertain arise

out of the existing operations. Thus, IEO is central to IE domain and extant literature has widely utilized three-dimension measurements of EO construct (Covin & Miller, 2013).

Many research on IEO has been largely studied the relationship of EO and international performance (Covin & Miller, 2013; Miller, 1983) and are limited to the Chinese context (Covin & Miller, 2013). Many of those research have found strong, positive relationship between IEO and international performance (Rauch, et al., 2009). However, these findings are not unchallenged. Several, but few, studies have found insignificant relationship between entrepreneurial orientation and firm performance (George, et al., 2001). Further, it revealed that majority of studies on IEO research or on IEC research have conceptualized the elements of IEO as multi-dimensional constructs. For example (Dimitratos & Plakoyiannaki, 2003; Dimitratos, et al., 2012; Gabrielsson, et al., 2014). However, the extant literature are with this long debate on the fact of concerning the dimensionality of EO (Rauch, et al., 2009). This study, following three-dimension of EO construct originally proposed by (Miller, 1983), suggests that IEO has unidimensional effect on international performance and hence innovativeness, proactiveness and risk-taking are considered as elements of IEO dimension of IEC construct. Taking into the consideration of the central role of IEO research in IE domain, this study, therefore, proposes the following proposition.

Proposition 1 : International Entrepreneurial Orientation (IEO) is positively related to international performance of born global firms.

International Market Orientation (IMO)

As per (Cano, et al., 2004), market orientation is a significant driver of performance which leads for long-term success. IMO refers to the stance and behavior that the firm stresses to create superior value for its customers in multiple countries (Gabrielsson, et al., 2014; Hartsfeild, et al., 2008; Narver & Slater, 1990). There are two approaches of conceptualizing IMO. First, following (Narver & Slater, 1990), IMO could be operationalized in terms of employee behaviour and it comprises of three elements: international customer orientation, international competitor orientation and inter-functional coordination. The second approach, according to (Kohli & Jaworski, 1990), defines IMO with respect to organizational behaviors of general information, dissemination of information and responsiveness to information. Even though IMO has been comprehensively conceptualized, a very few studies have been conducted to an inclusive extent in IE domain (Dimitratos & Plakoyiannaki, 2003). However, as per extant literature, IMO is the second most important driver of international business performance. Despite few studies, finding a negative or no relationship, most studies have found a significant and positive relationship between IEO and international performance (Cano, et al., 2004; Hartsfeild, et al., 2008; Slater & Narver, 1995). Accordingly,

Proposition 2 : International Market Orientation (IMO) is positively related to international performance of born global firms.

International Learning Orientation (ILO)

ILO refers to the proclivity of the firm to acquire dynamically intelligence on foreign markets and to make use of it to its maximum (Gabrielsson, et al., 2014). Baker & Sinkula (1999) define LO, in general, as an organizational characteristics which encourage learning and related to higher-order learning. According to (Jantunen, et al., 2008), learning orientation is not just acquiring knowledge from customers and competitors. Thus, it refers to acquisition, creation and transfer of knowledge, and challenge existing values and norms to reproduce new knowledge and insights for new value acquisition (Wang, 2008). The firm's learning culture takes place in three stages (Dimitratos, et al., 2012): information acquisition, information dissemination and information use.

Learning orientation is essential for internationalized firm in two ways: first to identify opportunities in foreign markets and second for the growth and long-term success of internationalized firms (Dimitratos, et al., 2012). According to (Autio, et al., 2000), BGs are characterized by the feature of “learning advantage of newness”. Extant literature has found that LO is positively related to organizational innovativeness, new-product success, capability development and long term performance (Jantunen, et al., 2008). But, unexpectedly, studies investigating the role of LO in international performance is significantly scarce in extant literature (Jantunen, et al., 2008). With the essential role of ILO research in IE domain, this study, therefore, proposes the following proposition.

Proposition 3 : International Learning Orientation (ILO) is positively related to international performance of born global firms.

International Networking Orientation (INO)

INO refers to the extent to which the firm has access to resources, generated in the external environment, through various levels of alliances and social embeddedness in order to use them in foreign activities (Gabrielsson, et al., 2014; Dimitratos, et al., 2012). Thus, the role of networks is essential for entrepreneurs to identify international opportunities (Oviatt & McDougall, 2005; Ellis, 2011; Kontinen & Ojala, 2011), build-up credibility, quickly identify, access and mobilize external resources (Oviatt & McDougall, 2005; Stam & Elfring, 2008; Weerawardena, et al., 2007). Thus it eventually leads to higher international performance (Dimitratos, et al., 2012; Stam & Elfring, 2008; Chun, et al., 2014).

Networking are two types: formal and informal. Formal ties are partnerships and industrial contacts which comes in the forms of financial, technology and strategic and informal ties are social and community-based networks (Makhbul & Hasun, 2011). Many research on networking in IE domain are restricted to BG firms and they use these network ties in order to overcome resource constraints in international operations (Dimitratos & Plakoyiannaki, 2003). INO is a principal dimension in IEC not because it leads to increased international performance but also it links to both IMO and ILO in terms of developing business-to-business relationships and promoting knowledge sharing and learning (Dimitratos, et al., 2012). In this vein, this study suggests,

Proposition 4 : International Networking Orientation (INO) is positively related to international performance of born global firms.

International Opportunity Orientation (IOO)

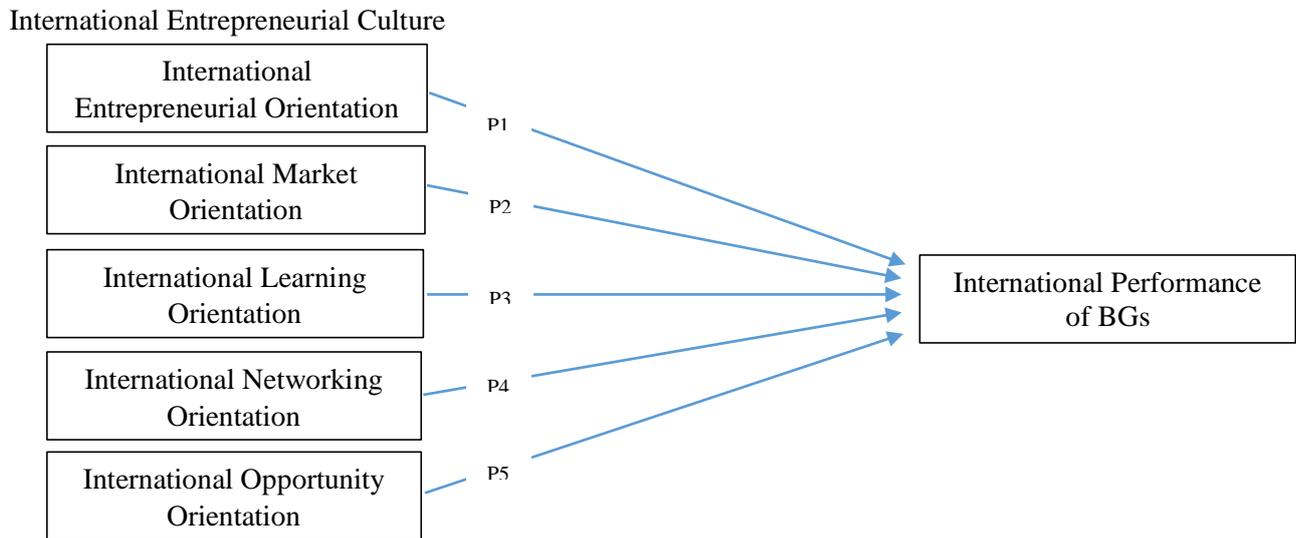
It is increasingly recognized that entrepreneurial opportunities are at the heart of entrepreneurship (Davidsson, 2004; Shane, 2003; Short, et al., 2010). Eckhardt & Shane (2003) define entrepreneurial opportunities as “the introduction of new goods, markets, raw materials and organized methods in order to create something new” (p.339). Identification and selection of the right opportunities for new businesses are among the most important abilities of a successful entrepreneur (Ardichvilli, et al., 2003; Shepherd & DeTienne, 2005). Further, understanding entrepreneurial opportunities is important because the characteristics of opportunity influence the entrepreneurial process (Shane, 2003). Therefore, identifying correct opportunities lead entrepreneurs to start new ventures and do significant improvements in existing businesses (Sambasivan, Abdul, & Yusop, 2009).

But, previous research has not identified IOO as a separate construct in IEC, leading to international performance. Rather, opportunity-based approach has been used to operationalize IEC in international performance. For example, (Dimitratos, et al., 2012; Dimitratos &

Plakoyiannaki, 2003; Gabrielsson, et al., 2014; Zahra, et al., 2005). As they argue, dimensions of IEC (IEO, INO, ILO and IMO) affect to discover opportunities in international markets. Since opportunity seeking behavior is central to entrepreneurship/IE (Oviatt & McDougall, 2005; Shane & Venkataraman, 2000; Short, et al., 2010) it is essential to address the extent to which opportunity oriented behaviour affect international performance, as a separate construct in IEC. Thus, this study proposes the following proposition.

Proposition 5 : International Opportunity Orientation (IOO) is positively related to international performance of born global firms.

Figure 1: Proposed relationship between IEC and International performance of BGs



Moderators of IEC – Performance relationship

Internationalization Strategy

Calof & Beamish (1995) define internationalization as “the process of adapting firms’ operations (strategy, structure, resource, etc.) to international environment” (p.116). Internationalization patterns of BG firms, aiming at rapid internationalization, is one of the main concerns in IE domain and their decision to follow a rapid internationalization is clearly a strategic one (McDougall & Oviatt, 1996). Based on internationalization strategy, firms engaged in international operations could be categorized into three distinct groups: born globals, born-again globals and traditionally internationalizing firms (Jantunen, et al., 2008; Kuivalainen, et al., 2012; Bell, et al., 2003). Thus, BG firms follow different internationalization strategies depending on the degree to which BGs engage in international operations, i.e degree of internationalization (DOI) or degree of born globalness (DBG) (Kuivalainen, et al., 2007). Instead of Jantunen, et al’s (2008) categorization, Kuivalainen, et al. (2007) groped BGs into two separate groups: true born-global and apparently born-global. In line with the majority, this study follow the first group of categorization. The first group – Born globals – follow early and rapid internationalization strategy, i.e., from or near their inceptions, BGs engage in international operations in multiple countries in order to gain a higher international performance. The second group – born-again globals (BAG) – are firms typically well-established in their home markets, having no intention to internationalize, but due to a sudden “critical incident” embraced rapid and committed internationalization (Bell, et al., 2003). Finally, the third group – traditionally internationalizing firms – first focus the

growth in the domestic market and then adopts a slow and incremental process of internationalization in order to avoid the unnecessary risks and investments (Jantunen, et al., 2008). Thus, the study expects born global strategy, born-again global strategy and traditional incremental internationalization strategy to have a more positive effect on ICE-performance relationship of BGs. Internationalization strategy of firms could be defined in terms of scale, scope and time of internationalization and these are the widely used key dimensions of measuring internationalization (Oviatt & McDougall, 1994; Kuivalainen, et al., 2007; Kuivalainen, et al., 2012; Jantunen, et al., 2008). Scale is the most widely used dimension of measuring internationalization and refers to the share of turnover from foreign markets out of the total sales volume. Scope of internationalization means number of markets or distant markets in which firms operate internationally. Time of internationalization refers to the speed of internationalization and used various indicators to define it. However, extant literature does not provide commonly agreed explanations in defining these dimensions of internationalization strategies.

Though the extant literature has recognized the importance of the role of internationalization strategy and its influence on IEC-performance relationship, only a few studies have been conducted in this regard (Kuivalainen, et al., 2007; Jantunen, et al., 2008; Kuivalainen, et al., 2012). However, non-optimal combinations of orientations and strategies leads poor international performance (Jantunen, et al., 2008). They further assert that orientations-performance relationship is reliant on the chosen internationalization strategy. Giving contradictions in the field, some other studies have reported that following a rapid internationalization strategy do not lead firms to better perform internationally (for example: Bloodgoos, et al., 1996). Thus, the study suggests,

Proposition 6: The internationalization strategy (IS) moderates the IEC-performance relationship of BGs.

In particular, since this study proposes the multi-dimensional effect of IECs towards the international performance of BGs, the following sub propositions are also possible.

Proposition 6(a): IS moderates the IEO-performance relationship of BGs.

Proposition 6(b): IS moderates the INO-performance relationship of BGs.

Proposition 6(c): IS moderates the ILO-performance relationship of BGs.

Proposition 6(d): IS moderates the IMO-performance relationship of BGs.

Proposition 6(e): IS moderates the IOO-performance relationship of BGs.

Strategic Competencies (SC)

Strategic competencies refers to the managerial skills needed for managers in performing key strategic functions of a firm (Knight, 2001), simply they are business strategies. Those key strategic functions are marketing, R&D, quality and unique product development and distribution. The most important and widely used strategic competencies needed for performing strategic functions of BGs are technological competence, unique products development, quality focus and foreign distribution competence (Knight & Cavusgil, 2004). According to strategic behavior theory, strategic competencies lead firms to accelerate firm performance and for its long-term survival. Strategic competence is essential for BG firms in order to face the resource constraint challenge (Knight, 2001). Thus, several studies have found that orientations-performance relationship is contingent upon the chosen strategic competencies (for example; (Knight & Cavusgil, 2004; Knight, 2001). In line with (Knight & Cavusgil, 2004), this study proposes to assess the strategic competencies in terms of technological competence, unique product development, and quality focus. Technological

competence refers to firm's technological capabilities which leads new product development, exiting products improvements and production process improvements. Unique product development means designing distinctive products for unmet customer wants and this will increase customer loyalty. Quality focus refers to improvements of the features or performance of products which can meet or exceeds customer expectations. Thus this study proposes,

Proposition 7: Strategic competencies moderates the IEC-performance relationship of BGs.

In particular, since this study proposes the multi-dimensional effect of IECs towards the international performance of BGs, the following sub propositions are also possible.

Proposition 7(a): Strategic competencies moderates the IEO-performance relationship of BGs.

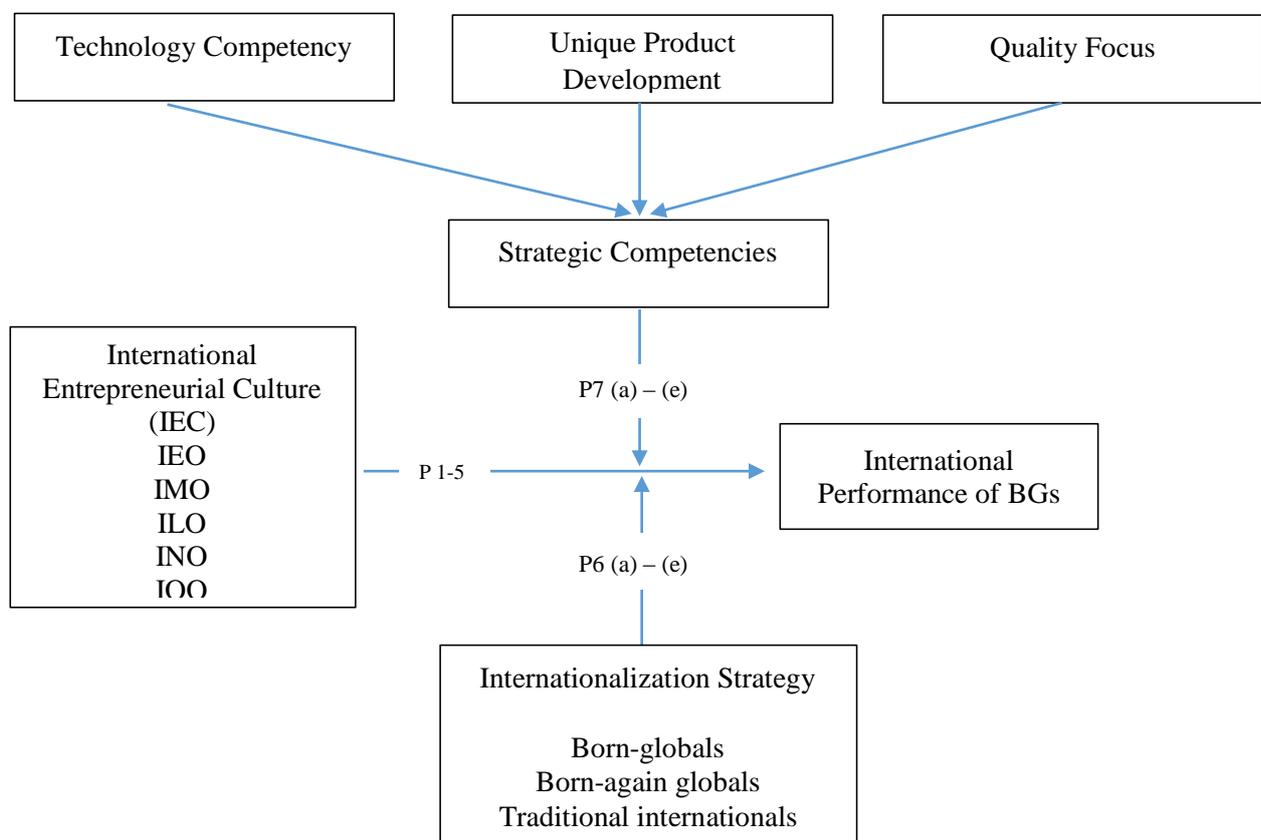
Proposition 7(b): Strategic competencies moderates the INO-performance relationship of BGs.

Proposition 7(c): Strategic competencies moderates the ILO-performance relationship of BGs.

Proposition 7(d): Strategic competencies moderates the IMO-performance relationship of BGs.

Proposition 7(e): Strategic competencies moderates the IOO-performance relationship of BGs.

Figure 2: The proposed conceptual framework of the study



Methodological suggestion

Most of the research studies on entrepreneurship have been performed as quantitative studies. Thus, to provide an empirical support for the conceptual frame work proposed above, a quantitative research method will be most appropriate in order to conduct a cross-industry field survey for primary data collection. The unit of analysis of the study will be BG firms as the

focus of the study is on firm level entrepreneurialness of BGs towards their international performance. The ICT/BPO exporters, registered at the Export Development Board (EDB) in Sri Lanka, has chosen as the sample of the study and the sample includes 250 exporters.

For this purpose, the study will be used two main research instruments as structured questionnaire and interviews. The self-structured questionnaire will be developed to collect data. The study intends to employ both descriptive statistics and statistical inferences for the data analysis purpose in order to achieve its objectives. Therefore frequencies, means and standard deviations will be used as main descriptive statistics. Multivariate analysis will be applied to test the model of the study. Structural Equation Modeling (SEM) will be the main statistical tool in this regard. However, when using regression or ANOVA, the researcher can only conducts his/her analysis on variables that are directly measured, and this can therefore limit the testing of the (Baker & Sinkula, 1999; Covin & Slevin, 1991; Doyle & Wong, 1998) underlying theoretical constructs (Martens, 2005). But SME measures the relative importance of each independent variable included in the model. Another important attribute of SEM is that it can address the measurement error that other linear techniques cannot model.

Discussion

This study is an attempt to develop a novel conceptualization with regard to entrepreneurialness of BGs. For this purpose, it discusses the influence of three main constructs of international entrepreneurial culture (IEC), Internationalization strategy (IS) and strategic competencies (SC) on international performance of BGs. IEC is the key antecedent to international performance of BGs and is a comprehensive phenomenon more than entrepreneurial orientation as it captures both the dimensions of entrepreneurship and international business. Further, this study improves the notion of IEC by incorporating a new dimension – IOO – the central them of both entrepreneurship and international entrepreneurship. In order to comprehensively understand the role of IEC in international performance of BGs, this study highlights the importance of adding potential moderators to the IEC-performance relationship. Thus, IS and SC are potential moderators to the IEC-performance relationship. Since the extant literature lacks a rich theoretical base in developing comprehensive conceptual frameworks and constructs, the outcome of this study will contribute to this lacuna.

Born global entrepreneurs, academics and policy makers can learn much by studying the underline phenomenon of this study. In particular, this study provides several important insights on which dimensions of international entrepreneurial culture ICT/BPO exporters in Sri Lanka should improve in achieving higher performance and as well, provide directions to formulate right business strategies in relation to the born globalness in order to accelerate their international performance.

Further, this study contributes to the existing knowledge in several ways. Firstly, it introduces the concept of international entrepreneurial culture, including international opportunity orientation into the born global context. Secondly, it develops an integrated performance model for BGs, incorporating the moderating effects of IS and SC. Thirdly, it contributes to the methodological development by applying SEM as of the pioneering studies in this field of research and finally, this underline phenomenon is discussed first time in the Sri Lankan context.

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An Exploratory Study Of The Role Of Economic Capital For Polish Entrepreneurs In Their Pursuit Of Self-Employment In Ireland.

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An Exploratory Study Of The Role Of Economic Capital For Polish Entrepreneurs In Their Pursuit Of Self-Employment In Ireland.

Abstract

Immigrant businesses are important to the Irish economy and represent new engines of growth for the economy. It is in this context that this research focuses on the experiences of Polish immigrants in Ireland - the single largest immigrant group in the country. The key research question that guides this study is: what is the role of economic capital for first-generation Polish entrepreneurs in their pursuit of self-employment in Ireland? Based on a qualitative research approach, twenty five in-depth interviews were conducted with Polish entrepreneurs.

Evidence from this study highlights the reliance on personal savings to finance the business; a lack of interest in sourcing funds from financial institutions and a lack of trust in State institutions. Additionally a lack of awareness of business support agencies and the services they offer clients was evidenced in the study. Polish entrepreneurs, unlike other immigrant groups, who have a propensity to access finance from informal sources, did not utilise ethnic resources - family, friends, community – to finance their business, instead they relied exclusively on their own financial resources. This research contributes to the extant literature both in terms of theory, knowledge and understanding of the forms of economic capital employed by immigrant entrepreneurs.

Introduction

For generations Ireland has traditionally been a country of emigration, with the majority of Irish migrants travelling to countries such as the United States, Britain and Australia (Ruhs 2009). This trend of outward migration reversed in the 1990s due to an unprecedented economic boom, earning the title ‘The Celtic Tiger’, as economic commentators compared its rapid economic expansion to similar economic growth rates of the ‘Four Asian Tigers’, those of Hong Kong, Singapore, South Korea and Taiwan (Kriings 2010). One of the consequences of such economic development is demographic transformation, with former emigrants returning home and also many new economic immigrants choosing to come to Ireland (Walsh and Mottiar 2011). The most dramatic change in Ireland’s migration pattern occurred in 2004 with the expansion of the European Union (Barrett et al 2006). This expansion incorporated ten new member states, eight of whom were former Eastern Bloc states, and precipitated a flow of individuals from the new European Union member states into Ireland (Central Statistics Office 2006). Nationals from the new Member States, most significantly from Poland, dominated the Irish inward flows, comprising over 40% of immigrants from 2005 to 2007 (Central Statistics Office 2008). The Census of 2011 demonstrated that 766,770 non-Irish nationals from 196 nationalities were living in Ireland, an increase of 25% on 2006, and accounted for 17% of the total population. Furthermore, Polish nationals (122,585) were the largest non-Irish group living in the State with their numbers increasing by 93% between 2006 and 2011 (Central Statistics Office 2011). Factors that have influenced immigrants to choose Ireland as a destination include: it’s dynamic and flexible labour market (Doyle *et al* 2006); it’s favourable economic climate, with relatively high wages, easy availability of work and better employment conditions (Grabowska 2003) and it being an English-speaking country enables language skills to be acquired as well as new employment skills (Kropiwiec 2006).

A survey conducted before accession demonstrated that Polish nationals indicated a high willingness to migrate to Western European countries for employment, but Ireland did not feature extensively as a destination country (Grabowska 2003). Ireland's decision to open its labour market must therefore be considered as a decisive factor that led to Ireland becoming a popular destination for immigrants. According to Doyle *et al* (2006), although some of these immigrants came to Ireland to flee persecution, war, and oppressive political regimes, the majority were economic immigrants coming to earn a better wage, and to seek out a better life for their families. In return, they offered an indispensable source of workers for the Irish economy at a time when the labour market was in short supply (Pinkowski 2009). Such a proclivity to work is highlighted by the CSO's assessment that the Polish came to Ireland to work, while the Chinese came to study. Only 2% of the Polish nationals in Ireland aged 15 or over were in school or college, while 43% of Chinese aged 15 or over were studying in Ireland (Central Statistics Office 2008).

Given their recent entry to Ireland we know little about the work-related experiences of this ethnic group (Roeder 2009), with little if any research considering the new phenomenon of businesses being established by Polish migrants in Ireland. Therefore, our concern is with one aspect of Polish immigrant's economic participation in Ireland: self-employment.

Pinkowski (2009) recognises the significance of immigrant businesses to the Irish economy and propose that the search for new engines of growth in Ireland should encompass the potential contribution that immigrant entrepreneurs can make to their new locations. Others have echoed this and deem this new area of entrepreneurship worthy of further research (McGinnity *et al* 2011; Shoesmith 2006). While the extant literature abounds with studies attempting to investigate the impact entrepreneurs' access to social capital has on their ability to launch and develop successful enterprises, a limited number of studies have specifically studied the diverse forms of economic capital underpinning entrepreneurial activity for an individual, none of which have examined the Irish context. As a result we know very little about the various forms of economic capital utilised by immigrant entrepreneurs in their pursuit of self-employment in Ireland. It is within this theoretical space that this research seeks to make its contribution. The purpose of this paper is to explore the role of economic capital underpinning Polish entrepreneurial activity in Ireland. The forms of economic capital are examined next and the ways they can be utilised and employed for entrepreneurial activity is discussed.

Forms of Economic Capital

Whilst concepts of capital are not novel to the social sciences their significance to entrepreneurship is a recent development that has implications for the research field (Lam *et al* 2007). Economic capital is a lucrative asset and one that can be transformed into monetary form (Vershina *et al* 2010). It comprises access to material resources such as savings, property, or inheritance (Abdulrahim 2009) and is important for a number of reasons: sufficient economic capital facilitates business survival even in circumstances of low performance (Brüderl and Schussler 1990); presents the opportunity to exploit profitable opportunities in the market (Vinogradov 2008); influences stakeholders' perception of the stability of new businesses and facilitates some individuals to enter and re-enter the new venture creation process (Vinogradov 2008). Individuals who do not possess adequate economic capital will not be in a position to access credit from mainstream markets in the host nation (Smallbone *et al.*, 2003). Furthermore, Bourdieu (1986) posits the view that economic capital is at the root of all other types of capital and recognises that all types of

capital can be derived from economic capital through altering efforts of transformation. The key elements of economic capital are discussed below.

Sources of Start-up Capital for Business

Much research (Ram and Carter 2003; Ram and Smallbone 2001; Smallbone *et al* 2003) purports that a significant proportion of immigrant businesses have never utilised or had access to any formal forms of support from banks and other financial institutions and therefore had to depend on personal savings and ethnic social resources to finance their business. Research indicates that informal sources of finance utilised by immigrant entrepreneurs are largely due to the difficulties associated with accessing formal financing (Basu 1998; Deakins *et al* 1997; Smallbone *et al* 2003). Cooney and Flynn (2008) perceive the proclivity for immigrant businesses to rely on family and friends for financial assistance can be determined by cultural and social predispositions, as certain cultures would not seek financial assistance from their family and community. For example, Chinese entrepreneurs in the United Kingdom (UK) are more likely to access finance or business advice from the mainstream business sources (Deakins and Freel 2003). Basu (1999) also asserts that successful immigrant entrepreneurs often rely predominantly on their own personal savings to fund the business venture. In Cooney and Flynn's (2008) Irish research study, it was revealed that almost half of respondents (47%) utilised their own personal savings to fund their business, while the second most popular option was borrowing from family members and friends. This leads to the question: what is the level of awareness among the immigrant communities of the existence and availability of external sources of finance?

State Agency Awareness and Accessibility

Previous research has highlighted that immigrant groups have a lack of awareness of business support initiatives that are available in the mainstream environment and face language barriers (Ram and Jones 2007). In two Irish studies Cooney and Flynn (2008) and Birdthistle *et al* (2012) indicated that aspiring ethnic entrepreneurs in Ireland did not demonstrate an awareness of external sources of finance beyond financial institutions, personal contacts and building societies. A lack of awareness of the existence and availability of business support on offer was the prime reason proposed in explaining non-engagement. However, case studies conducted in the UK report that a lack of awareness of mainstream support is not necessarily the primary explanation concerning the low propensity of immigrant entrepreneurs utilising formal sources of support and advice (Deakins *et al* 2005; Ram and Smallbone 2001). Their findings highlighted a lack of understanding of the various types of support that are accessible; uncertainties regarding their significance, a lack of assurance and a low level of enthusiasm and capability to pay may explain this evasion by immigrant minority groups.

Finance as a Barrier

Entrepreneurship theory indicates that in order to participate in entrepreneurial activity, entrepreneurs require access to resources and, in particular, financial capital (Wetzel 1981). A significant body of research highlights that economic capital may be challenging for immigrant groups who have greater difficulty in raising finance and in gaining access to business support or advice than the mainstream populace of entrepreneurs (Cooney and Flynn 2008; Deakins *et al* 2003; Smallbone *et al* 2003; Vershinina *et al* 2010). Krieger's (2011) European study found that for immigrant entrepreneurs, access to capital is reported as one of the greatest barriers they face. He identifies a number of factors why immigrant entrepreneurs get fewer bank loans, such as their inability to write a business plan and their poor knowledge of finances. However, the fault doesn't always lie with the immigrant entrepreneur. Krieger (2011, p.27) states that the low level of bank loans can also be explained by the behaviour of the banks and other financial institutions and the way in which they operate, including "oversensitive risk management and occasionally biased attitudes of bank managers." Consistent with international study results, Cooney and Flynn's (2008) research of immigrant business owners in Ireland highlighted that accessing business funding is one of the biggest challenges facing ethnic entrepreneurs in Ireland. The difficulties experienced by entrepreneurs in accessing external finance in other countries is captured in the research of Vershinina *et al* (2010), who examined Polish entrepreneurs in Leicester, in the UK. This position is also mirrored in the research of Curran and Blackburn (1993), who examined Bangladeshis, Greek-Cypriots, and African and Caribbean's in the UK, again they reported problems in securing financial assistance.

Risk-Averse Behaviour

Research proposes that immigrant entrepreneurs use deliberate strategies to avoid formal institutions and highlight a lack of trust between immigrant entrepreneurs and providers of financial and business support (Vershinina *et al* 2010). Yet, Deakins *et al* (2005) posit that trust is required to establish relationships between individuals and lending institutions. This unwillingness to engage with formal institutions may also be explained by considering the immigrant entrepreneur's aspiration for independence (Barret *et al* 1996).

Start Up Process

A lack of familiarity with the institutional and legal frameworks governing business activities may prove onerous for immigrant entrepreneurs (Van Delft *et al* 2000). Given their preliminary unfamiliarity with the economic, social and governance structures of the host country, it is to be expected that compliance with the legal and financial structures prevailing in enterprise institutions, in addition to specific sector regulations, can prove difficult and demanding for ethnic entrepreneurs (Cooney and Flynn 2008). Although all entrepreneurs are faced with challenges in the form of lack of complete information on the sector/industry and its operations, these problems are frequently more acute for immigrant entrepreneurs because of the language barrier. Thus, in comparison to their local counterparts, immigrant entrepreneurs are at an information and knowledge disadvantage in navigating the rules and regulations that govern SME enterprise. Consequently, many immigrant entrepreneurs are drawn to ethnic enclaves where they rely on information sharing among their co-nationals by virtue of ethnic cohesion (Walsh and Mottiar 2011). In their study, Cooney and Flynn (2008) highlighted that the business environment in Ireland is perceived positively by ethnic entrepreneurs. The respondents acknowledged that the Irish environment actively encourages entrepreneurial activities. Their positive perception of the business environment in Ireland contrasted sharply with the challenges they affiliate with new venture creation in their countries of origin (Cooney and Flynn 2008).

Business Planning

The final factor in economic capital, is business planning. In the absence of an ample understanding of core business tasks and good business insight and knowledge, immigrant entrepreneurs are conspicuously disadvantaged in comparison to those entrepreneurs who are in possession of specialised business credentials. Cooney and Flynn (2008) revealed that the majority of respondents indicated that they need to improve their level of expertise in the field of business planning and organisation, financial management, cost control and marketing. In the case of business planning, 61% of respondents cited that they required further training in their understanding of this area. Cooney and Flynn (2008) and Krieger (2011) acknowledge respondents' inability to prepare an appropriate business plan as a key reason why they are not successful in their application to secure adequate funding for their business.

The economic capital elements reviewed in this section are the building block for the interview framework which is identified in the following section.

Methodology

The focus of this study is an emerging piece of research in the Irish context, which aims to explore the forms of economic capital employed by Polish entrepreneurs in their route to self-employment. It therefore was necessary to employ a methodological approach which provided the opportunity to gain insights into the experiences and perceptions of Polish entrepreneurs in Ireland. This led to the choice of a qualitative paradigm. Interviews were chosen as the most appropriate data collection tool in order to create new insights and enlighten the nature of this elusive process through the perspectives of the participants. In the context of this study twenty five semi-structured in-depth interviews were conducted with first-generation⁴⁹ Polish entrepreneurs. Initially, a direct approach to gaining access was adopted, through the generation of contact details from public sources. However, only nine respondents were generated through this sampling method; therefore, to acquire additional respondents snowball sampling was employed, where respondents were asked to advise or recommend other potential respondents to participate in this research. Through this snowballing technique the researcher was able to access one hundred Polish entrepreneurs in Ireland, of whom sixteen agreed to participate. This allowed the generation of a rich data set with potentially diverse perspectives and experiences of the new venture creation process in Ireland.

An interview guide was created to provide a suitable structure for questioning; ensuring that only the most significant themes identified in the literature were incorporated. Although the interviews were conducted in English, the interview guide and information letter were translated into Polish by a native speaker and the respondents were offered a choice of a Polish or English version. The translated version of the questions made it possible to account for cultural and perceptive differences. Respondents were also offered the option of the translator to be present during the interview. During the interview process, entrepreneurs were asked about their motivations for self-employment, how they financed the start-up of their business, the resources used, and the support received when setting up their business in Ireland. Discussed also were the main challenges facing non-Irish business owners, and whether they considered access to finance a barrier for Polish entrepreneurs in Ireland. NVivo was used to help find relationships within the data and emerging themes. The

⁴⁹ A first generation entrepreneur is defined as an individual who was born in Poland with both parents also born in Poland.

organisation and construction of the data around common themes facilitated the creation of numerous cases where comparisons and dissimilarities were investigated. Nee and Sanders (2001); Ram *et al* (2007) and Vershinina *et al* (2010) employed a thematic approach in their study of immigrant entrepreneurs and a similar approach was adopted in this study. The general themes were assigned identifying nodes and, consecutively, the sub themes and unanticipated themes that materialised were allocated further tags and identifiers to assist extracting data from the transcripts. The coded data was connected to arrive at patterns, regularities and at times, variations (Dey 1993). In the next section we present and discuss our findings of the study.

Findings and Discussion

This section of the paper will thematically present and discuss the main findings from the qualitative interviews undertaken. The objective of this study was to explore the role of economic capital for first generation Polish entrepreneurs in their pursuit of entrepreneurship in Ireland. Direct quotes from the participants are presented in this section⁵⁰. The section begins by examining the respondents' experiences of accessing and securing finance.

Sources of Start-up Capital for Business

Sources of start-up capital for the business are the first of the dominant themes to emerge from the analysis of the economic capital data. Polish entrepreneurs utilised various channels to access finance for their business as presented below. Personal savings emerged as the dominant factor in this study as over half of the respondents relied upon personal financial resources to finance or partially fund their business venture, as illustrated in the following statement:

It was all my savings; I wouldn't go to a Bank to be honest. I don't know if it's a Polish thing. Why go to a bank? So I saved. I mean, maybe, it's my company, Information Technology; there is not much to invest to start off, so yeah, my savings was what I needed.

The respondents' reluctance to approach financial institutions may also be explained by considering their self-elected goals of independence as evidenced below:

I have been doing this all my life, spending only what I have in my account. I do not take a loan out for strange and different things. I always rely on my own money, this is the way I have been my whole life. I use a credit card for the business but only the minimum amount what we have to use.

Some 24% of respondents highlighted that it was a lack of economic capital in Poland that drove them to Ireland, as they perceived Ireland as a nation that provided opportunities to generate income sufficient for themselves and their families. Interestingly, nearly all respondents (92%) had worked in Ireland prior to establishing their business in order to raise the capital required for start-up, as illustrated in the following cases:

Lots of people would have savings from work and they would be starting their business with their savings.

First, I was doing tiles for people as a job than I saved some money and decided to open an installation business.

⁵⁰ In fulfilling the requirement to preserve the confidentiality, all identifying information has been anonymised.

The findings of this study reflect Basu (1999); Cooney and Flynn (2008); Fitzsimons and O’Gorman (2008); Ram and Carter (2003); and Smallbone *et al* (2003) who all noted that immigrant entrepreneurs indicate a high dependence on self-financing. The results additionally revealed that Polish entrepreneurs in this study are reluctant to approach formal or state institutions for financial assistance when establishing a business, instead preferring to rely on their own financial resources. This is examined below.

The findings of this study mirror a high level of financial independence at the beginning of business start-up and a lack of dependency on external means of finance. The results provide persuasive evidence that respondents did not attempt to secure finance from external providers as only one-quarter of respondents approached a financial institution for assistance. This relatively low number may be attributed to the respondent’s negative perceptions of financial institutions and their deliberate avoidance of banks. Of the six respondents who approached a financial institution, the success rate was high as 83% (five) of these respondents were successful in securing financial assistance for their venture, which could provide a good indication as to the viability of these businesses. However, one must be cognisant of the fact that a certain amount of personal savings were also required by financial institutions in order for these respondents to secure funding for their business as evidenced below:

We did not get funding initially but two years later we went to the bank to set up a business account and get an overdraft, and the reason for that was to have a history with the bank so if we needed more credit in the future or a loan we could have shown that we have a good history with the bank. Nationality didn’t play any role with the bank. It was just to make sure we had a history with the bank from our personal dealings with them so again it was strictly on business merit.

Furthermore, respondents indicated that they did not perceive any unfavourable treatment by financial institutions when attempting to secure finance for their venture:

I had no problem with the bank from the very beginning we always had our account with AIB so when we went to them in 2008 we had been with them for three years so they could have just checked our history.

Interestingly, the findings indicated that 80% of respondents who were successful in their application for financial assistance predominantly serve the mainstream market with their product/service and not the ethnic market. The findings further revealed that 33% of respondents who were eligible for assistance from financial institutions were also successful in their application for funding from mainstream business support agencies, which is discussed below.

Over half (52%) of respondents who were eager to establish their own business examined the services governmental support agencies offered and explored whether they were eligible for any potential financial assistance. Almost one-third (32 %) of respondents participated in a ‘Start Your Own Business’ programme provided by enterprise support bodies. The remaining respondents revealed that they went to these agencies to seek information and support for their business and to enquire whether they were eligible for any financial assistance for their venture as is evidenced by the following:

There are some wonderful people in Limerick City Enterprise Board who are willing to help you with the writing of a business plan and if you don’t get it right the first time,

and if they see a potential in your business, they will try to help you so that you can get the grants.

Additionally, the results revealed that 20% (five) of respondents received financial assistance from mainstream enterprise support agencies to partially fund their business, as illustrated in the following citations:

I am not sure if they still offer it but I received a grant from Enterprise Ireland called Commercialisation of Research and Development and that basically gives you 50 % of your salary and expenses over 12 months' time.

I lost my job in 2008, so I was unemployed for 18 months. I went to the Enterprise Board for help. They were extremely helpful and helped me get the European Global Funding. They told me about this money, which was a great help for me.

Furthermore, 40% (two) of these respondents also received assistance from their financial institution provider at the start-up phase of their business. Importantly, those respondents who received support from government support agencies articulated that they could not solely rely on this source of funding to fund their business start-up and also had to invest their own personal savings into their business, as evidenced below:

The business was self-funded from the beginning and the money that we received from Enterprise Ireland. However, although this helped the business and was an incentive I had to have my own funds to start the business. I couldn't have just relied on this assistance from Enterprise Ireland.

A common finding, which permeates this research, was the lack of awareness of potential sources of external funding; the majority of respondents who did not approach mainstream business support agencies for financial assistance indicated this and this is examined in the following section.

State Agency Awareness and Accessibility

This section discusses respondents' affiliation and awareness of mainstream business support agencies in Ireland. Interestingly, 48% did not approach mainstream business support agencies for assistance. A key issue to emerge in this study was that a number of respondents were unaware of the various mainstream enterprise agencies and therefore this was a contributing factor to their non-engagement with business training programmes and mentoring/networking structures. The majority (92%) of these respondents not affiliated with mainstream enterprise agencies highlighted problems concerning enterprise agency accessibility and a lack of information available for aspiring Polish entrepreneurs as the primary factor for non-participation, as evidenced below:

Now we have been in business longer, yes I have heard about it. But certainly when going into business that was never something that we would have done or went to or trained with, or ever think about, or heard about even.

A myriad of factors were suggested when explaining their non-engagement with these agencies, with local knowledge and language barriers highlighted as two of the most significant reasons, as illustrated in the following quote:

No, I never went to the Enterprise Boards or any business support centres for help and it was only recently that I had heard about business training courses that they offer. I didn't know about those services being available at all at the time.

This reflects the findings of Ram and Smallbone (2001); Deakins et al (2005); Ram and Jones (2007); and Birdthistle (2012) each of whom identified lack of awareness of business support initiatives and language barriers as key challenges for immigrant entrepreneurs when accessing formal sources of support. The respondents in this study stated that there is a significant barrier regarding awareness among the Polish community as to the availability of enterprise supports:

We actually didn't even know who the County Enterprise Boards were. We only learnt about them a few months later after we had set up our business.

Most of the Polish people don't know about these business centres. I got information from people who I am working pretty closely with and from local business people in Limerick, and loads of people like that.

This finding is a key concern given the significance of the Polish population in Ireland and the fact that this is not the first time research has identified this problem. In the context of this study, respondents discussed the use of Polish media as an appropriate means to enhance the visibility and awareness of mainstream support agencies in Ireland. This finding fits with earlier work by Cooney and Flynn (2008), where respondents advocated that ethnic media is the most suitable means in order to enhance awareness of Irish business representative organisations. Therefore, it is apparent that raising awareness of the existence and availability of business support agencies is a key concern for developing Polish entrepreneurship in Ireland. Respondents' risk-aversion to seek financial assistance from external parties is the focus of the next section.

Risk-Averse Behaviour

Risk aversion to obtaining finance from institutional providers and ethnic networks was evident in this study. The findings revealed that nearly half of the respondents (44%) would not approach an external party for financial assistance and indicated that they relied solely on their own funds to finance their business venture, as evidenced below:

It is not hard to save. You don't need to have a good car to start or you don't have to get a loan for a house straight away. You should save a few quid but people don't understand that, they want everything now and never think about their future but I could still save some money for my business because banks they only rob you.

This was mirrored by the following respondent who perceived formal institutional business support agencies to be an impediment themselves:

They are sometimes discouraging you because it is their business to say ok this is how we think you should do that, and are you able to do that or not. So they discourage you to do certain things not to lose money. I think there should be more support offered. I would definitely avail of it if it was there.

The respondents further articulated that obtaining finance from 'traditional' funding sources was not an alternative and spoke about a cultural and risk aversion to borrowing money.

I did not need to go to the bank for help. Am and I don't like the idea of borrowing money so I think I would have gone to my parents before the bank but mostly I was ok by myself

No nothing at all this is something maybe again back to my father that you learn not to go to a bank just save what you have.

Interestingly, two respondents who were successful in their application for financial assistance by the Irish banks and believed that, unlike themselves, fellow Polish nationals were extremely averse and unwilling to approach a financial institution for financial backing. The following quote identifies that, although this respondent received a small loan from a financial institution, he was required to invest a significant proportion of his savings in his business; therefore he articulated that it is imperative that his business survives:

Looking at other businesses that I know who got government funding a lot of these businesses have already closed and I think it is because they just got the easy money. They didn't work as hard as we did; they had a different mind-set to us. They were just concerned with getting more and more money and when the money ran out they couldn't keep going, so they closed down. We had everything to lose if it didn't work out.

The respondents also reported a lack of trust between Polish entrepreneurs and the host nation's banking system. Consequently, these individuals were hesitant to access finance from financial institutions, as evidenced in the following quotes:

I think the banks made a mistake in Ireland because they gave loads of money to everyone. They gave loans to everyone. They get interest for this but in my opinion they are robbers because they have such a high interest rate.

Of those who did not get assistance from a financial institution (27%) they revealed that they do not have any trust in state institutions on historical grounds, citing communism as the primary factor for social and institutional distrust. This results in individuals being risk averse to apply for financial assistance from formal sources of finance in Ireland as illustrated in the following quote.

All the revenues in Poland treated us as potential thieves and they never treat us like they treat people here in Ireland. It is still because of the heritage from the communist time. You had to be careful you don't know who you see in Poland.

The findings of this study reflect previous work by Barret *et al* (1996); Deakins *et al* (2005); Ram and Jones (2007); and Vershinina *et al* (2010), who all contend that there are deliberate evasion strategies to avoid financial institutions among immigrant entrepreneurs. Consistent with Basu (1999), Fitzsimons, and O'Gorman (2008), respondents in this study indicated that they preferred to rely upon their personal savings regardless whether formal sources of finance were available. Moreover, as previously discussed there is a lack of awareness of mainstream formal sources of support/finance among this cohort of entrepreneurs. However, this is not essentially the explanation for the lower propensity of Polish entrepreneurs to use formal sources of finance and support as the findings of this study have identified deliberate strategies to avoid engagement with formal sources of finance. Another area of interest identified in this study was the role played by ethnic resources (networks, friends, family, ethnic communities) in providing start-up capital for business ventures. In the context of this study, social capital was not utilised for financial support, specifically it was avoided, and the majority of respondents in this study (96%) indicated that their social networks (networks, friends, family, ethnic communities) were not used as a

source of start-up capital for their business. The findings of this study demonstrate that social capital was not primarily rooted in economic capital as evidenced below:

Family and friends are very important to get a lot of advice and business experience from but nothing financial. I didn't ask family for a loan or friends for loans nothing just what they know.

The results provide persuasive evidence that ethnic networks were not utilised for financing business start-up by this group of entrepreneurs. When questioned further the most frequent response was that they would be extremely averse to seek financial assistance from their own ethnic community. However, this may suggest that it is a socio-cultural predisposition that Polish nationals are reluctant to borrow funds from their co-ethnic peers. Thus, the role of social capital for financing amongst Polish entrepreneurs in this study is different to the use of social capital among other ethnic communities such as African and Caribbean, South Asian, and Cuban entrepreneurs who rely on co-ethnic networks for financial assistance (Ram and Deakins 1996; Smallbone *et al* 2003).

Interestingly, the results of this study deviate sharply from previous research (Ram *et al* 2001; Ram *et al* 2003; Ram and Carter 2003; Ram and Deakins 1996; Smallbone *et al* 2003), which highlight the significant role played by ethnic resources in providing financial assistance for immigrant entrepreneurs. Furthermore, this finding also diverges from Cooney and Flynn's (2008) Irish study where ethnic resources were identified as the second main source of start-up capital for immigrant entrepreneurs. Consequently, this strategy to overcome the challenges frequently experienced in securing finance from financial institutions by employing ethnic resources (networks, friends, family, ethnic communities) appears to be culture specific and is not associated with the majority of Polish respondents in this study who have displayed a considerable amount of autonomy in sourcing finance/capital. Subsequently, the findings highlighted that over half of the respondents in this study perceived the attainment of assistance from financial institutions to be extremely difficult in the current economic climate and this is discussed in the next section.

Finance as a Barrier for Polish Entrepreneurs

In this study over half of respondents (52%) perceived access to finance as a key impediment confronting Polish entrepreneurs in Ireland. This perception may be reflected in the small number (24%) of respondents who approached financial institutions for assistance, as previously discussed. Interestingly, 85% of respondents who acknowledged finance as a barrier to start-up were self-sufficient and utilised their own funds to finance their business venture, and did not approach financial institutions for assistance. The remaining respondents, while they themselves received financial assistance from formal sources of finance, similarly consider access to finance as a significant challenge for Polish entrepreneurs in Ireland, as evidenced below:

It has become very difficult to get a loan nowadays but banks are very strict on everything. It's a huge thing to get any money from anywhere.

The respondents further highlighted that attempting to secure finance for a business at present is an extremely difficult task confronting all entrepreneurs, considering the weakness of Irish banks after the downturn in the domestic property market and the near-collapse of global debt markets in 2008.

It is a major problem now, yes, because I know a lot of Polish people and Eastern Europeans, Russians, Czechs, Lithuanians, Latvians. They have got an idea and want to set up a business and the problem is finance.

The findings of this study reflect previous work by Cooney and Flynn (2008), as respondents revealed that Polish entrepreneurs' comparative disadvantage in seeking financial assistance may be attributed to factors such as lack of collateral, cultural inhibitions, poor credit history, language proficiency, inadequate business plans and limited growth potential of the business.

If you come from another country you don't have, particularly with Polish people, you don't have any assets, and it is always asset based, a loan is asset based. So yes, I would see it being difficult for Polish people to achieve a loan and therefore to set up the business.

The next section examines the ease of business start-up and discusses how the business environment in Ireland is accommodating for the establishment of small and medium firms.

Start-up Process

The start-up process in Ireland was identified as being easier than in Poland, as there are fewer bureaucratic procedures and requirements. This was noted by 68% of respondents who acknowledged that they were able to establish a business in spite of not being familiar with the Irish business environment. It was remarked by respondents that the business environment in Ireland encourages entrepreneurial endeavours and business activities. This finding reflects previous work by Cooney and Flynn (2008), as they found that respondents in their study acknowledged the following factors underpinning the attractiveness of Ireland in which to establish a business: minimal bureaucracy, friendly business environment, a clear legal tax structure, minimal amount of start-up capital required and a low corporate tax rate free from bureaucratic constraints as illustrated in the following quote:

Again, comparing the business environment here to Poland, it is 100% easier to set up a business in Ireland. There is much less bureaucracy; it's just a completely different environment in Ireland. It is quite easy to start on your own whether you want to setup a limited company or start as a sole trader.

The ease of start-up in Ireland moderately explains how immigrants, who have been made redundant or are unhappy in their employment, are in a position to establish a new business as a solution, as starting a business can be done promptly in Ireland.

Business Planning

In the case of business planning, 92% of respondents considered themselves competent in this area. Encouragingly, and deviating from the findings of Cooney and Flynn (2008), the findings of this study demonstrate an acute business acumen amongst the majority of respondents. Respondents in this study placed a significant emphasis on the importance of planning and further articulated that although their primary qualification was not strictly in the business field, this did not affect their capability to prepare this document as they had previous experience in report writing and were familiar with the components of a business plan. Further to this, of those respondents who were self-funded (68%), nearly all (95%) wrote a business plan despite not being required to do so by a financial institution. This is a very significant point as it highlights good business acumen. A significant number of respondents had prepared the plan alone (72%) and the remaining respondents received

assistance when preparing their business plan from mainstream business support agencies where they had undertaken a business training programme.

The mentor from the Enterprise Board advised me to make any necessary changes that I needed to make. This was helpful.

The mentor helped us with our financial plan and business plan. He was very helpful and guided us enormously.

This demonstrates that the forms of capital are inter-convertible (one form of capital transforms into another). For instance, having human capital (participated in a business training course) and the contacts made there facilitated respondents with economic capital (assistance with the business plan) as highlighted above. Furthermore, this finding supports the concept proposed by Light (2001) that the transformation of any type of capital into any other form of capital necessitates the need for initial capital of any type to initiate the change.

Conclusion

The conclusion that can be derived from this study is that economic capital has a role to play in entrepreneurial activities of immigrant entrepreneurs. In respect of financing, the majority of respondents relied exclusively on personal savings to finance their business. It is clear from the findings that respondents were uninterested in sourcing funds from financial institutions and did not attempt to secure funding from an external funding source. A lack of trust in State institutions was cited by a number of respondents as the primary reason why they would not attempt to secure external funding for their business. Furthermore, respondents did not show an awareness of external sources of finance beyond financial institutions and personal contacts. A lack of awareness of business support agencies and the services they offer clients was acknowledged by respondents as the key reason why they have not attempted to secure assistance from these support agencies.

The findings further reveal that social capital was not employed in securing financial assistance for Polish businesses. The results indicate that Polish entrepreneurs, unlike other immigrant groups, who have a propensity to access finance from informal sources, did not utilise ethnic resources (family, friends and community) in providing financial backing for their business, and instead relied exclusively on their own financial resources. Additionally, the findings highlight that the majority of respondents revealed that they perceived availability of finance as a serious concern for all entrepreneurs in the financial crisis. The respondents indicated that the global financial crisis has severely impacted entrepreneurs who are dependent on credit and reliant on external financial resources. It was raised by a number of respondents as a significant concern facing aspiring and established entrepreneurs in Ireland, irrespective of nationality.

The majority of respondents' articulated that the economic and social environment in Ireland encourages and promotes entrepreneurial endeavours. Furthermore, they highlighted the ease of the start-up process in Ireland in comparison to Poland and indicated that this was a significant feature of the decision making process to establish a business in Ireland. This research has shown that the majority of respondents demonstrated a comprehensive understanding of core business functions and good business acumen as they prepared a business plan prior to start-up despite not having a business degree. The respondents indicated that taking time to create an extensive business plan provides you with insight into your business.

The contribution of this study has been to show the different ways in which Polish entrepreneurs combine and utilize different forms of economic capital for their business venture. How forms of economic capital were used to create diverse entrepreneurial ventures was clearly differentiated in this study. The contribution of this exploratory study lies in expanding the existing body of research on immigrant entrepreneurship in Ireland. With reference to the existing literature in the field of immigrant entrepreneurship in Ireland, prior research was of a quantitative nature with a region specific focus. This exploratory study is a timely response to address the paucity of empirical studies on immigrant entrepreneurship in the Irish context. Understanding this under researched phenomenon from a qualitative perspective adds an additional research opportunity. The field of immigrant entrepreneurship is still in its infancy in Ireland and through the synthesis of the literature this study provides a comprehensive setting for future academic studies of immigrant entrepreneurship in Ireland. A key contribution of this study to the field of immigrant entrepreneurship is raising awareness of the particular needs of this group and it is hoped that this study will stimulate further research concerning this cohort of entrepreneurs.

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Entrepreneurs Searching for Scalable Business Models: The Barriers of the Customer Development Process

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Entrepreneurs Searching for Scalable Business Models: The Barriers of the Customer Development Process

Abstract

This paper identifies and analyzes barriers startups encounter when following the Lean Startup approach, i.e. the Customer Development process during the initial phase of identifying and validating a business model. In an action research setting, we mentored and interviewed eleven startups enrolled in a business development program called “Born Global” running 7-10 months. For the barrier prior experience, entrepreneurs who had previously encountered failure, had a long period of unsuccessful work, or had heard about Customer Development previously were more likely to follow the process. A main finding was that the entrepreneurs were busy and lacked time and/or money. Deeper reasons included team conflicts, lock-in to an earlier business model by means of a business plan and boards intent of following the old business plan. The lock-in to the old business model can be explained that several startups had gotten a first round of funding based on a flawed business plan.

Introduction

This paper explores barriers to implementing the Lean Startup or Customer Development⁵¹ methodology among technology startups. This methodology is a largely practitioner driven and very normative set of principles for managing startups that primarily targets startups with high potential and ambitions for growth. Essentially, the Lean Startup presents an approach to entrepreneurship that emulates the scientific method. Premised on the idea that the future is highly uncertain, it treats the new venture as a set of hypotheses and sees as the central task of the entrepreneur to conduct experiments to test these hypotheses in order of priority (Ries, 2001; Blank and Dorf, 2012). In this sense it can be seen as an application of the scientific method to the entrepreneurial process.

The ideas expressed in the Lean Startup literature resemble several contributions from the entrepreneurship field that shun long term planning and embrace experimentation and iterative learning (cf. Berglund et al., 2007). Sitkin (1992) embraced designing for systematic failure as an efficient way to learn; drawing on real options reasoning, McGrath and MacMillan (1995) proposed discovery-driven planning as a rational approach to manage under uncertainty; and Donald Sull (2004) laid out an explicitly Popperian approach to entrepreneurship as the design and execution of experimentation to test hypotheses.

While presaging the Lean Startup methodology, neither of these ideas gained much traction among practitioners. The same cannot be said for the current diffusion of the Lean Startup movement itself. But while rapidly increasing in popularity among entrepreneurs, investors, accelerators and university incubators, the Lean Startup methodology has to our knowledge not been subject to much academic inquiry. To remedy this, we use data from an action-research project, where Lean Startup principles were introduced to a set of high-potential Swedish technology startups. The paper empirically analyzes how a set of “real startups” (i.e. not students or entrepreneurship students) seek to follow this method in order to identify and analyze process deviations and encountered barriers. Through an action-research design we have tested the customer development approach on 16 different firms in three different programs, ranging from 7 to 10 months. During the programs we have followed the firms in their attempt to follow the Lean Startup method. In addition to gathering data as part of

⁵¹ Lean Startup and Customer Development are used interchangeably, as they often are by its proponents (cf. Blank, 2012)

running the programs, we have interviewed the participating entrepreneurs after having finished the program.

We use this data to inductively identify and analyze common barriers faced by entrepreneurs as they seek to implement the Lean Startup methodology. Our ambition is to use the resulting insights to better understand such barriers, but also to amend the normative Lean Startup methodology in ways that makes it more prescriptively valid. Stated differently, we seek to answer the question "How can real entrepreneurs—as opposed to imaginary, idealized, superational actors without cognitive and social constraints—make better choices?"⁵²

The Lean Startup: The Scientific Method applied to entrepreneurship

The Lean Startup methodology is a popular manifestation of a more general tendency to regard entrepreneurship as analogous to the scientific method or more precisely Popperian falsificationism (cf. Harper, 2002; Berglund et al., 2007). Similar to scientists, the key activity of entrepreneurs is seen as stating explicitly the assumptions, on which the emerging venture is based, and then designing, running and evaluating experiments to test these assumptions in order of priority. Just as revision and refinement of assumptions is seen as the central measure of progress for scientists (Popper, 1963), "validated learning" about the venture's business model is seen as the core measure of progress for entrepreneurs (Ries, 2011).

Some authors have recommended experimentation as a more general approach to developing business related knowledge, i.e. knowledge that can improve products, processes, systems, and organizations (Thomke, 2003). It should therefore be noted that the Lean Startup methodology has a much narrower view. In line with the focus on validated learning, an experiment in the Lean Startup context is squarely focused on quickly and efficiently reducing critical venture uncertainties. Experiments are thus not focused on product development, process enhancements and the like, but on answering questions like: who are our customers, what problems do they have, what product can solve these problems, what are they willing to pay to get them solved etc. (cf. McGrath and MacMillan, 1995, Sull, 2004). Of course, when conducting experiments to test such assumptions, the entrepreneur will often build products and sell services, but then the product is a means to attain learning and not an end in and of itself. Hence, the Lean Startup methodology embraces agile development methods and even the development of simple mock-ups and prototypes if this can lead to efficient validated learning (Ries, 2011).

The process of experimentation will naturally lead to both successes and failures (Lee et al., 2004), and since both contribute to learning, they should both should be embraced as valuable to the entrepreneur. A well-understood falsification of an assumption may produce insights that help the entrepreneur formulate better venture assumptions to design better experiments (Thomke, 2003; Ries, 2011).

Experimentation is cumulative and iterative (Hassi and Tuulenmäki, 2012; Thomke, 2003) and the faster an experiment iteration is completed (formulate assumption, run experiment, evaluate result, formulate new assumption), the quicker feedback from one experiment may be incorporated into upcoming experiments. Since speed is often critical in entrepreneurship, experimentation speed is often more important than rigorous design (Blank and Dorf 2012). To be cumulative it is still important to properly interpret the result of each experiment

⁵² This quote paraphrases Bell, Raiffa, and Tversky (1988): "How can real people-as opposed to imaginary, idealized, superational people without psyches-make better choices in a way that does not do violence to their deep cognitive concerns?"

(Thomke, 2003). However, since the underlying signal measured is often quite strong during the early stages of a new venture (e.g. do people in segment X seem to have problem Y) it is often possible to conduct such experiments rapidly, using small sample sizes, simple mock-up products etc.

Experiments can generally be divided into exploratory or hypothesis-testing (Garvin, 2000) where explorative deals with 'what-ifs' and hypothesis-testing aims at finding the best among a set of possible options (Garvin, 2000; Thomke, 2003). Here, exploration can be seen as a broader search but it clearly is short of the "manipulative character of hypothesis-testing" (Thomke, 2003).

Barriers for the Venture Creation Process

Startups are prone to failure because of a broad range of barriers, including lack of market knowledge, psychological biases, low self-efficacy, lack of social networks, and limited access to capital (Robertson et al., 2003; Sobel et al., 2007; Jane and Ali, 2013). Thus, entrepreneurial success is largely dependent on the startup's ability to manage various barriers during the entry, execution and growth stages.

In the last decades, researchers have produced a long list of barriers to entrepreneurship. Many of these barriers are quite general in nature and therefore it may be difficult to draw practical implications from relative to customer development. There have been several taxonomies with regards to nature of barriers to new venture creation and the activities this process entails. The list contains taxonomies such as motivational and legal barriers (Sandhu et al., 2010), formal, informal, environmental and skills barriers (Aidas, 2005), psychological, social and institutional barriers (Jain & Ali, 2013), strategic and structural barriers (Bain, 1956), organizational, individual and environmental barriers (Sandhu et. al, 2010), and psychological, political and socio-cultural barriers (Kouriloff, 2000).

Others organize barriers according to stages of venture development, namely entry (starting to engage in entrepreneurial activities), development (search for a repeatable and scalable business model) and growth (efforts to scale). Most papers focus on entry-level barriers (Shurry et al., 2001; Sandhu et al. 2010; Kouriloff, 2000; Shapero, 1984; Stinchcombe, 1965; McClelland, 1976) or growth level barriers (Robsen and Obeng, 2007; Van Geenhuizen and Soetano, 2009; Feldman and Klofsten, 2000). However, there has been little research about the period between the inception of the firm (when entrepreneurs take the leap and engage in the venture development processes) and when the firm reaches to the point of stability and the decision of growth comes into the picture.

Previous research have identified and discussed barriers such as management information overload (Van Geenhuizen and Soetano, 2009), limited access to finance and the need to seek funding (Shurry et al., 2001; Van Geenhuizen and Soetano, 2009; Feldman and Klofsten, 1999; Silva et al., 2008), cognitive lock-ins (Ferriani et al., 2008) and business model lock-in (Amit and Zott, 2011), the lack of customer responsiveness (Silva et al., 2008), organizational inertia (Nelson and Winter, 1982), and lack of customer focus (Clifford and Cavanagh, 1985) among others.

When it comes to the development phase, the literature on barriers to innovation gives some additional insights. In our definition of entrepreneurship, entrepreneurial activities are a set of activities that create value for the end-customers through creating innovative offerings. The literature on barriers to innovation maps barriers according to their nature: economical (Tidd et al., 1997; Binks and Ennew, 1996), internal (Silva et al., 2008; Freel, 2000;), structural (Ferriani et al., 2008; Clifford and Cavanagh, 1985; Mondiano and Ni-chionna, 1986; Tonge

et al., 1998) and organization (Birley and Niktari, 1995; Freel, 2000; Chesbrough and Rosenbloom, 2002; Nelson and Winter, 1982).

Unfortunately these barriers do not fully explain why entrepreneurs who engage in venture creation activities using a systematic method do not follow the process and deviate from its principles. To our knowledge there are no prior studies conducted in order to identify barriers encountered when following the customer development process. Given the widespread of the customer development method begs the question of what the barriers are to follow such a method.

Research Method

This research is conducted in an action research setting. Action research is an approach to research where researchers and the organization closely cooperate to find real problems and find the solutions to these problems through an iterative problem solving cycle (Argyris et al., 1985; Bryman and Bell, 2011). This cycle entails identification and formulation of the problem, as well as planning, action, and evaluation of the solutions (Argyris et al., 1985). The present study is a multi-year program in which Lean Startup principles were introduced to a set of high-potential Swedish technology startups. The program was organized and run by a group of researchers, including the authors, who over time began noticing that the participating firms—while agreeing in principle that the Lean Startup methodology was very sound and logical—appeared to have problems enacting the method in their own startups.

The cases for this study, were selected from the startups that enrolled in a business development program called “Born Global” an ALMI (Innovationsbron) funded program. ALMI is a Swedish government agency providing venture capital and advice for startups. The entrepreneurs learnt about the Lean Startup methodology from experts (university professors, serial entrepreneurs, venture capitalists and industry experts). The Born Global program consisted of 6-7 full day workshops and lectures during a period of 7-10 months. During and especially between workshops and lectures the participants from each startup was tasked with identifying critical business model assumptions, running experiments to test these and, if needed, update their business model. Each team worked with a coach who regularly gave feedback on the work process of the startup. On three separate occasions, the startups also received feedback from a separate panel consisting of VCs, serial entrepreneurs, innovation managers and investment managers. In addition, the authors were involved in discussions with the entrepreneurs on a regular basis.

During the course of the program, the startup teams also documented their activities, including experiments and business model revisions, on a web-based system called the Launchpad Central, which has been developed for this specific purpose. This system was used in order to make the progress visible and enable rapid feedback from the involved coaches, other companies and the faculty running the program.

The participating startups were chosen from a larger set nominated by a group of VCs, serial entrepreneurs, as well as by business coaches working at Swedish incubators and science parks. These startups were all invited to a meeting where the program was presented and informal interviews with the startups took place. The Born Global management team then selected ten firms based on the perceived potential of the firms and the team. Before the program, the data was collected from the firms through interviews and their webpages. During the program data was collected through observations, interviews and discussions, followed by 15 ex-post interviews with 11 of the participating startups.

During the interviews, 1-3 interviewees were present. The collected data was compiled in a table by dividing the results into 5 domains of mental model of business development process prior to start, barriers to following the Lean Startup methodology by conducting customer interviews, barriers to evaluation of the findings, barriers to changing the business model, and barriers to developing the mental model of Customer Development. The interviews, then, were triangulated by comparing the statements of the respondents with their documented material concerning customer interviews.

Results

The questions around encountered barriers were asked across five different dimensions: 1) The respondents' mental model of business development process prior to start; 2) The perceived barriers to follow the Customer Development process; 3) The perceived barriers in analyzing and evaluating the conducted customer interviews; 4) The barriers to changing the business model based on the evaluation; and 5) How the entrepreneurs had developed their understanding of Customer Development and if there were any problems to do so. See Table 1 for an overview.

In terms of the mental model of business development process prior to start, we found the following. The entrepreneurs varied from having startup experience, managerial positions in large firms, being consultants or 'pure' engineers. Some entrepreneurs had thought about how to create a business, including reading about Lean Startups. One respondent had read and even taught customer development himself.

A main result in terms of how the firms followed the process was that it varied greatly across the companies. However, the amount of interviews was less than stipulated by Blank and Dorf (2012). Most thought they should have done more work, especially in terms of interviews. When asked for why they "deviated" from the prescribed Customer Development process, the respondents stressed lack of time. In part the reason was that most entrepreneurs were not fully dedicated to searching and validating a new business model in the way the process prescribes. Probing more deeply, there were three main reasons.

The first barrier is financial constraints. Hardly surprisingly, the entrepreneurs needed cash to avoid going bankrupt. To avoid it, several were writing new business plans in order to convince venture capitalists to get another round of seed funding. Others were busy consulting or working with short-term delivery rather than focusing on how to get a more functioning and scalable business.

A second reason is cognitive lock-in. One respondent explained that he liked to talk to people similar to himself and therefore only interviewed a few engineers. Another stated that he feared losing customer confidence if he was to interview customers. He solved the problem by using an interviewer external to the startup. Afterwards he followed up the interviews himself by attempting to make a sale. This was creative and may not just be viewed as a barrier only as he adapted the Customer Development process rather than just ignoring it.

In terms of how the entrepreneurs analyzed and evaluated the findings, and barriers to evaluation the following were found. Several of the teams spontaneously came up with ways to analyze the result. They stated that discussions with others were crucial for being able to make sense of the collected data. A barrier to discussions was lack of team building. This was particularly severe for a firm with single person startups but also a firm with huge conflicts was affected severely.

Roughly half of the companies came up with better approaches spontaneously, including continuous discussion of interviews, use of recordings and whiteboard. Several respondents

had failed to spontaneously get discussions started or experiment with other analysis approaches.

The program setup with feedback on interviews via the software was not used the way it was intended. The main reason for this was that the entrepreneurs found it too elaborate to enter the information and due to time constraints. Technical problems and a cumbersome approach to document interviews in the prescribed software meant that relatively few interviews were documented. This partly caused a limited feedback from mentors and other startups. Perhaps as a consequence, the discussion among the entrepreneurs and mentors were relatively limited. The program setting helped overcome some issues as the entrepreneurs discussed their problems with others. We interpret this to be a complement and not a substitute however.

Finally, there was an indication of a business model lock-in in line with Chesbrough (2010). The collected data was not disregarded, as much of the information did not fit the existing business model. This is somewhat surprising given that the basic assumption of the program was that the existing business models were in an early stage and not verified or dysfunctional and needed a change.

The fourth issue involved barriers to changing the business model based on the evaluation of the collected information. Several entrepreneurs were clearly locked-in to existing business models. In two cases, this lock-in was institutionalized by an existing business plan. Another startup thought they had already identified a minimum viable product (MVP) but after several months of discussion within the program and based on interviews they realized this was not the case. Once the entrepreneur realized this, he had some difficulty with their investors before they convinced the existing business model (which made a small profit) was a dead-end.

One company stated that a major barrier to implementing the new business model was that they had to improve the technology, which delayed the process for six months. Another company meant that the Customer Development process resulted in so many ideas, it become difficult to know what they should act upon.

The last set of question dealt with how the entrepreneurs had developed their understanding of Customer Development during the program. No respondents said they found it difficult to understand Customer Development but several stressed that it was after the program they more fully understood it. The reason for a confessed relative slow learning was lack of time and attention to the process. One respondent stated that while he understood Customer Development he did not fully believe in it. He used some aspects of the Customer Development approach, the other half was more of sales initially rather than finding out what kind of job the customer wanted to solve.

Startup (one respondent per firm shown)	Mental model of business development process (esp. customer development) prior to start of program?	How was the customer development process followed by interviews etc.?	How were the customer development process findings evaluated?	How was the original (intended) business model pivoted / innovated? Were there any barriers to changing the business model relative to evaluation of findings?	How was the mental model of customer development developed? Were there any barriers to development?
Firm 1	Quite high but thought of Customer Development as a soft approach. Didn't understand "listen, don't talk"	Ca 150, could have done more but not critical. Diminishing returns to interviews. Followed the plan. Little change – difficult to see during the process	Discussed all interviews internally	Right no. of pivots. Initially hard with few interviews then easier to know what to do, quantity of interviews led to understanding. After program changed our technology, which was a problem	Very high understanding
Firm 2	Didn't understand too much of it venture creation or Customer Development	40-50, short. No plan initially. Very short interviews, problem with time. Dragged people in during fairs.	Discussed many interviews internally.	Several pivots. Both rejected and verified hypotheses. Context changed so they had to change	Good understanding, thought of it as listen to customers. Inform rest of team of Customer Development following the program

		Consultant business to get cash in parallel.			
Firm 3	Not much.	20-30 not all documented. Focus on engineers as easier to talk to. Find people with money demanding or locked-in to older technology	Not much: Discussed a bit with coach. Did not want to enter alternative BMIs including big data	Just a clearer market segmentation. Potential BMIs not acted upon	Huge change, much better understanding
Firm 4	Not much	12-15. Should have done more. Very stressed during BG almost went bankrupt.	Alone, not systematic analysis. Interviews confirmed 'old knowledge'. No great changes	Better understanding of potential BMIs. Started to act but early stage.	High understanding, thinks prototyping and hypothesis testing is natural for an engineer.
Firm 5	Heard and read a bit before starting.	50, ca 20 documented. Very spontaneous. Hard not to sell during interviews. Problems with funding were running out of time.	Discussed internally and had some discussions with different coaches. The last was very useful as led to big data analysis techniques to analyze behavior. Useful discussions/comparison similar startup and BG	Took some time to realize working toward an interested but without any willingness or ability to pay (WTP) market segment. Overcome internal cognitive inertia by discussing with other startups and mentors in	Very high

				the program.	
Firm 6	Heard of Customer Development and Lean Startup. Thought had MVP but did not understand why they still experienced problems	Ca 10 interviews with customers. Followed initial plan. Send out questionnaire for users. Very useful with onsite observations. Followed up by chatting to users on-site, more useful than standalone interviews	No real process. Arguments during board meetings.	BMI to B2C; interviews not main source, observations e.g. better. Without BMI the firm would have gone bankrupt. Should have pivoted earlier. Problems with lock-in to old BM and business plan (board)	Very high.
Firm 7	Nothing, engineering background	15-20. Not enough. Prioritized other things, no dedication. Had a plan.	Some changes from interviews, plans for further interviews but not much.	No greater changes during program.	Started to puzzle pieces together.
Firm 8	Much business experience in a related area.	80-90, most of them not documented and shared outside the firm. Landing page and private beta very useful.	Listened to interviews together, whiteboard. Learnt to focus from private beta and interviews	Several BMIs after one another.	Very high
Firm 9	Startup experience focusing on several types of businesses.	30 interviews, 6-7 by himself the rest by intern, which	Useful to discuss with external interviewer; they hear other things.	BMI via program into new product market, modify old BM.	High

		worked really well. Lack of time and motivation to do more, wouldn't give more. Choose respondents they knew about			
Firm 10	Didn't understand business creation at first. Came from public sector work.	20-25%. Worked with consultant firm in parallel (50%). Needed funding -> had to write a new business plan to get funding (from ALMI who funded the program saying business plans are wrong). Spent time and money to buy out the CEO.	Useful understand problems with the product. Some dialogue. Breakdown of team led to poor internal discussion.	Not much, sharpening of value propositions .	Much higher, but after the program and the firm's bankruptcy. Went through the material again
Firms 11	Very high. I did read many books on Customer Development before the program. The program only	Ca 40 interviews. Only reported 20 in the LPC because of time constraints. We could have done more interviews.	To evaluate the findings it was necessary to do it with the team member. We had difficulties to evaluate the findings since we were in an early phase and it was so much to take in.	Difficult to take actions based on the interviews. Yet, we did several pivots.	Nothing. It only confirmed my prior knowledge.

	confirmed what I already know		This did not change over time.		
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Table 1 – Mapping of interviews based on five identified domains

Analysis and Discussion

The results indicate that there is a relation between entry-level understanding of Customer Development and how seriously the process was followed. Previous experience of failure, such as years of experiencing a mismatch between great user enthusiasm and lack of sales is one such aspect that relates to better following of the Customer Development process. The same applies for looking for better ways to set up a startup, including reading and discussing Customer Development, even if the entrepreneurs admitted they did not fully get it until they started working with the process. Therefore, a lack of earlier startup crisis or lack of an idea of what an experimental, search-oriented approach is related having respondents less able or willing to adapt to the intention of the Customer Development process.

Furthermore, many of the firms' respondents were not fully engaged with the startups. The main reason for this was having a consultant business on the side. A couple of respondents acknowledged they had entered the program not fully being aware what such a process would require in terms of time and dedication.

Many of the startups were locked-in to their existing business model. For some it was the traditional business plan that was required to convince the board members and investors. However having followed the process after a while made it easier to convince them that change was a must in order to get a fit between the value proposition and the targeted segment. For others, the existing business model simply was fixed. For them we find a correlation between following the old business model and refining it and the level of entry understanding.

Evaluation of interviews and collected data was limited of startups consisting of a single person or where there were major team conflicts. Two startups used visual tools to analyze their interviews. After having found out about how to use big data analysis tools, the web-based startups used such analysis techniques to analyze the behavior, retention etc. These complemented the interview findings as identified and could follow up behavioral facts by means of interviews or short questionnaires.

Conclusions

This paper identifies and analyzes barriers startups encounter when following the Customer Development process to validate a business model. Our findings show that three to eight months after the end of the program, the progress of the firms varied from having gone bankrupt, slow growth with a new business model, having pivoted one to several times and having found a minimum viable product (MVP), to successfully scaling their business and divested the business. All entrepreneurs ranged from being positive to very positive toward Customer Development (and to the program) before, during and in hindsight, regardless of performance. This view was consistent among the interviews conducted with the entrepreneurs before, during and after the Born Global program.

In the introduction we asked whether there are barriers to customer development. Hardly surprising the answer is affirmative as our results show that all the startups followed the Customer Development process but to widely varying degrees. Compared to the prescriptions and claims of Blank and Dorf (2012) the number of interviews and other ways of testing the business model was very low. All but two interviewees stated they should have performed more interviews and would do so "next time".

These results imply there were various barriers that prevented them to more fully follow the Customer Development process. To understand how well the startups had followed the customer development process. In particular, given the mismatch between their enthusiasm

over the customer development process and how they had followed the process we asked about what had prevented them from doing more according to the specification?

We divided the barriers into prior experience, mental awareness and activities. In terms of prior experience, entrepreneurs who had previously encountered failure, had a long period of unsuccessful work, or had heard about Customer Development previously were more likely to follow the process in terms of why the firms did relatively few interviews or did not change their business model despite lack of commercial success. A main finding across almost all of the firms was that they were busy and lacked time and/or money. Deeper reasons included team conflicts, lock-in to an earlier business model by means of a business plan and boards intent of following the old business plan. The latter can be explained that several startups had gotten a first round of funding based on an – in hindsight – flawed business plan.

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Entrepreneurial Calling

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Entrepreneurial Calling

Fast-paced changes in the world result in a wholly new environment of growing economic disparity and inequality with uncertain future. As a reaction to this volatile and unpredictable work environment, where individuals are compelled to mind their own careers and stable long-term employment is not granted for anyone, educational institutions and educators are urged to address the issues of employability. Since today's youth are the potential entrepreneurs of the future, understanding their perception about contextual factors can be a contribution to the development of the literature.

The present paper's objective is to contribute to the extant entrepreneurship literature by testing a model of entrepreneurial intention (EI), which special emphasis on a new construct: CALLING. It will attempt to provide a theoretical integration to explain entrepreneurial behaviour by introducing the Social Cognitive Career Theory (SCCT), widely used in the vocational psychology research but not known in the entrepreneurship literature.

SCCT model and the introduction of the new construct have been tested on archival data of the Hungarian wave of an international data set, the 2011 "Global University Entrepreneurial Spirit Students Survey" (GUESSS), using the PLS predictive path modelling method and the SmartPLS 2.0 software application. Calling has been found to strongly moderate the predictive relationship between self-efficacy, outcome expectations and intentions to start an enterprise.

INTRODUCTION

The convergence of globalization, technological innovations, knowledge-based economies and demographic trends has led to an increased focus on the effects and importance of entrepreneurship. Rae and Woodier-Harris (2013) label the post-2008 environment as the "New Era" where entrepreneurship will function as an engine of economic development. Thurik et al. (2013) in their paper depicting the future of dynamic capitalism refer shift from managed economy, "where economic performance is positively related to firm size, scale economies and routinized production and innovation to entrepreneurial economy , characterised by a convergence of institutions and policy approaches designed to facilitate the creation and commercialization of knowledge through entrepreneurial activity". (p.303) "Policies ... should enable individuals to build and apply knowledge in new collectives, be they firms, networks, or alliances, making use of new information and communication technologies". (p.309) The rise and globalisation of entrepreneurship is discussed in Sarasvathy and Venkataraman's (2010) paper entitled: Entrepreneurship as Method: Open Questions for an Entrepreneurial Future where the authors postulate a rise and an global dispersion of entrepreneurial thinking,

The present paper's objective is to contribute to the extant entrepreneurship literature by testing the validity of a new model of entrepreneurial intention (EI), which special emphasis on contextual variables of individuals resulting in their self-efficacy beliefs to start or to continue to run an enterprise. It will attempt to provide a theoretical integration to explain entrepreneurial behaviour by introducing the Social Cognitive Career Theory (SCCT), widely used in the vocational psychology research but not known in the entrepreneurship literature. As a complementary objective, the paper will discuss the validity of a latent construct that is new to both the SCCT and to EI models.

RATIONALE FOR THIS RESEARCH

In a reaction to a volatile and unpredictable work environment, where individuals are compelled to mind their own careers and stable long-term employment is not granted for

anyone, educational institutions and educators are urged to address the issues of employability. Since today's youth are the potential entrepreneurs of the future, understanding their perception about contextual factors can be a contribution to the development of the literature.

Fostering entrepreneurship needs a twofold policy that should focus on both the present situation and future prospect of entrepreneurship. Although many scholars and policy makers devote their attention to the present, it is equally important to map out the future context of entrepreneurship. Policy planning should also take into consideration the shifting value system of the young generations, specifically in the domain of vocation and career. The purpose of this paper is to fill this void by analysing the impacts of some contextual factors on entrepreneurial intention of university students.

The development of entrepreneurship as a discipline has been by either *multidisciplinary* (the “melding” of concepts from different discipline bases) or *interdisciplinary* (the discrete adoption of knowledge and methods from recognizable base disciplines) approaches. The challenge for the future is to take a *transdisciplinary* approach (Chell, 2000), that is, knowledge capture and assimilation from a variety of sources—not simply disciplinary—for the development of new knowledge and frameworks for understanding “reality”.

The paper intends to respond to the urge to explore contextual variables of the entrepreneurial process and in particular, the entrepreneurial intention. Entrepreneurship researches have been arguing that the extant models do not fully explain the entrepreneurial process and new sets of variables, such as contextual variables, temporal evolution of beliefs, perceptions and intentions should be included in a more dynamic model. From within the vocational psychology literature, there has been an urge towards further exploration of the predictors of career choices, and/or vocational calling, encouraging individuals to start out on a specific career path.

This paper, in its objective, hopes to position itself at the confluence of these two modern research endeavours, one from the entrepreneurship, the other from the vocational psychology literature.

NEED FOR NEW MODELS TO EXPLAIN ENTREPRENEURIAL INTENTION

Various authors have stipulated that the widely used models of entrepreneurial intention do not fully explain societal embeddedness and do not explore additional attributes that distinguish entrepreneurs from non-entrepreneurs (Fayolle et al. 2014; Liñán et al. 2011a, Fayolle and Liñán 2014, Carsrud and Brännback 2011). There are a number of relevant gaps in knowledge concerning the role which values and motivation play in entrepreneurship. In particular, the articulation of values and motivations within the entrepreneurial process perspective and the widely-used entrepreneurial intention models could be very promising (Fayolle et al. 2008; Liñán et al. 2011, Carsrud and Brännback 2011).

Fayolle and Liñán (2014) highlight research lines that would serve to expand and consolidate the usefulness and applicability of entrepreneurial intention models and point to the intention–action link in particular. “There is a need to carry out longitudinal studies and pay attention to the effect of environmental variables in the transformation of intention into effective action” (Fayolle and Liñán 2014). Similarly, Krueger, Reilly and Carsrud (2010) urge considering a dynamic intention model, taking into account the temporal evolution of beliefs, perceptions and intention. Finally, they postulate that there is also a substantial gap in the understanding of how intention antecedents are formed, and how these conditions moderate intention (Moroz & Hindle, 2012).

Prior research has primarily focused on parallel predictors of EI, and researchers have not comprehensively tested the boundary conditions for each of the competing theories. Recent calls (Carsrud et al. 2010, Shook et al. 2010) suggest that to understand the direct effects of the identified determinants, studies should examine potential moderating effects of contextual factors. Prior literature also suggests that researchers' methodological decision may moderate the relationship between EI and its antecedents (Tominc et al. 2007). The literature has primarily focused on direct relationships between EI and its determinants. Thus, currently little is known about how beliefs, attitudes, and perceptions influence each other and cause individuals to hold more positive intentions toward starting a business (Schlaegel & Koenig, 2013) in their meta-analysis involving 98 studies found that the TPB determinants as well as perceived feasibility particularly influence EI through perceived desirability (Fayolle & Liñán, 2014). Thus, the rationale for the present research is to demonstrate, how a new model, taken from the vocational psychology literature, can refine and enhance our understanding of the entrepreneurial intention and its components.

ENTREPRENEURIAL INTENTION (EI)

Entrepreneurship is a process that can be broadly distinguished into pre-launch, launch, and post-launch phases (Baron 2007), each corresponding to specific tasks and actions such as entrepreneurial intention (EI) and opportunity search, discovery and recognition, evaluation, and exploitation (Shook, et al. 2003). Within the pre-launch phase, the intention to become an entrepreneur is a pivotal component of this process (Bird 1988).

In the past two decades there has been intensive research carried out to investigate factors, perceived as impacting entrepreneurial intentions, such as gender (Díaz-García & Jiménez-Moreno 2010; Gupta, Turban, & Bhawe 2008), self-efficacy beliefs (Chen, Greene, & Crick 1998; Lee, Wong, Foo, & Leung 2011), risk preference/risk tolerance (Barbosa, Gerhardt, & Kickul 2007; Hmieleski & Corbett 2006), and social capital (Liñán & Javier Santos 2007). Several models have been used to explain entrepreneurial intention, such as Shapero's (1982) Entrepreneurial Event Model, the Model of Implementing Entrepreneurial Ideas (Bird 1988) or the Maximization of the Expected Utility Model (Douglas and Shepherd 2000), as part of the body of research on the attitude stream of entrepreneurship psychology. Despite their wide usage, none of these models have been as influential as the Theory of Planned Behaviour or TPB (Krueger et al. 2000; Liñán and Chen 2009; Moriano et al. 2012; van Gelderen et al. 2008). Unlike other models, the TPB offers a coherent and generally applicable theoretical framework which enables us to understand and predict entrepreneurial intentions by taking into account not only personal but also social factors (Krueger et al. 2000, Hirschi 2013).

Three antecedents explain entrepreneurial intention, according to the TPB. Firstly, the personal attitude (PA) toward behaviour, which is defined within the TPB as an individual's overall evaluation of the entrepreneurial behaviour (Ajzen 1991). This is determined by the total set of accessible behavioral beliefs linking entrepreneurial behaviour to various outcomes and other attributes. In addition, the strength of each belief is weighted by the evaluation of the outcomes (Ajzen 1991). The second component of the TPB is the subjective norm (SN), which is defined as the individual's perception of the social pressures to engage (or not to engage) in entrepreneurial behaviour (Ajzen 1991). The subjective norm consists of two components: normative beliefs and the motivation to comply with these beliefs. The third TPB component, perceived behavioral control (PBC), refers to people's perceptions of their ability to perform that behaviour. In fact, self-efficacy has replaced PBC in numerous studies on entrepreneurial intentions (Kolvereid and Isaksen 2006; Krueger et al. 2000; Moriano et al. 2012; van Gelderen et al. 2008).

With respect to these models, different studies have supported the assumption that attitudes toward entrepreneurship, subjective norms, perceived feasibility, perceived desirability, and propensity to act predict entrepreneurial intention (e.g., Krueger, Reilly, & Carsrud, 2000; van Gelderen, Brand, van Praag, Bodewes, Poutsma, & van Gils, 2008). Going beyond such research addressing predictors of EI emergence, the present study investigates how contextual variables such as education, age and gender predict EI and intention enactment.

SOCIAL COGNITIVE CAREER THEORY

Social Cognitive Career Theory (SCCT; Lent et al. 2005) is one of the most prominent models in vocational theories and research (Blustein et al. 2005). Bandura's (1997) self-efficacy construct, and the larger social cognitive theory within which is embedded (Bandura 1986), have initiated a wave of research on career behaviour over the past 25 years. Bandura's (1986) general social cognitive theory emphasizes the complex ways in which people, their behaviour, and environments mutually influence one another. The theory explains human behaviour as "a product of the interplay of intrapersonal influences, the behaviour individuals engage in, and the environmental forces that impinge upon them" (Bandura 2012, p.11).

Consistent with Bandura's theory, SCCT emphasises people's capacity to direct their own vocational behaviour (human agency) - yet it also acknowledges the many personal and environmental influences (e.g., socio-structural barriers and supports, culture) that serve to strengthen, weaken, or, in some cases, even override human agency in career development.

Consistent with Social Cognitive Career Theory (SCCT), self-efficacy is enhanced by contextual affordances proximal to career decisional behaviour, and recent research calls for a more extensive exploration of these affordances, even from a multidisciplinary approach. It offers a unifying framework for bringing together elements identified by previous career theorists—such as Super, Holland, Krumboltz, and Lofquist and Dawis—and arranging them into a novel framework.

Entrepreneurial self-efficacy, or the self-confidence that one has the necessary skills to succeed in creating a business, has been demonstrated to play a key role in determining the level of interest in pursuing an entrepreneurial career (Wilson, Kickul, & Marlino 2007 p.339). An important aspect of self-efficacy is that it is seen to be context, task and domain specific (Bandura 1989, 1992, 1997). While a composite measure of self-efficacy would be arguably more convenient, a number of scholars have sacrificed convenience in favour of greater predictive power (e.g., Begley & Tan 2001; Chen et al. 1998; De Noble et al. 1999; Forbes 2005; Kolvereid & Isaksen 2006).

Role model perception is a way of reinforcing self-efficacy because people who personally know an entrepreneur can feel they are more able to become entrepreneurs (Scherer et al. 1991). Another way to increase self-confidence in one's own capabilities is, by receiving education, both the general formal education and/or a specific education (entrepreneurship education) (Linán et al. 2011).

Outcome expectations are the results or desired outcomes of intentional actions in which individuals choose to engage (Bandura 1997). Bandura (1986) stated that outcome expectations are derived from observing situations and events in the individual's environment as well as actual outcomes resulting from actions the individual has taken. Outcome expectations are hypothesized to directly affect interests, intentions, and activities. Outcome expectations are presumed to be determined by the similar sources that influence self-efficacy: direct reinforcement from engaging in actions and vicarious learning from the consequences of others' actions (Fouad & Guillen, 2006).

Interest and the relationship between self-efficacy and interest is a topic that has long been of special interest to researchers. In terms of causality, most researchers (e.g., Lent et al., 1994, 2000) have suggested that self-efficacy leads to interest development, and Bandura (1997) has agreed with this ordering (Betz, 2007). Studies have shown the combined role of self-efficacy and outcome expectations in predicting interests, usually through a path analysis (e.g., Fouad & Smith, 1996; Fouad, Smith, & Zao, 2002; Lent et al., 2001).

From the point of view of SCCT entrepreneurship is a process not an event as entrepreneurial behaviour is consequential. In this sense an entrepreneurial act may be defined as follows: An entrepreneurial act or process is an attempt to respond to, and thereby change, a set of circumstances (perceived in a positive or negative light) with a view to creating a desired outcome (Chell, 2000).

CONCEPTUALISATION OF A NEW LATENT CONSTRUCT: CALLING

Across definitions, a calling is typically viewed as a job that provides personal meaning/purpose and that is used to serve others (Dik & Duffy, 2009). The source of people's calling is explained in diverse ways. less homogeneous in its . Traditionally, calling was a term used in a religious context with the implication that one was "called" by God or a higher power to engage in work that led to fulfilment of a larger purpose (Hardy, 1990). Calling source conceptualizations today embrace a range of concepts such as calling arising from a sense of destiny (e.g., what one is meant to do) or a perfect fit (e.g., a career that is an ideal match for one's skills, interests, and values) (Bunderson & Thompson, 2009; Dobrow & Tosti-Kharas, 2011). Dik and Duffy (2009) define calling as a career that arises from an external source (e.g., God, societal need, family legacy), contributing to a sense of meaning/purpose and that is used to serve others in some capacity. In this definition, it ensues from the external summons feature that calling is essentially distinguished from the notion of vocation.

Based on the results of his survey using cluster analysis to identify essential and optional components of a presence of calling among 407 German undergraduate students from different majors, Hirschi (2011) proposes that calling could, in accordance with Hall and Chandler (2005, p. 160), simply be defined as "work that a person perceives as her or his purpose in life", as this definition allows for an adequate differentiation of calling from similar constructs such as vocational identity achievement or career decidedness. Hirschi in his definition intentionally leaves out references to external summons. Likewise, several notions stress the importance of other-directed and pro-social values as a part of one's calling (Dik & Duffy, 2009; Elangovan et al., 2010), while others do not consider this to be a defining component (Hall & Chandler, 2005).

Dobrow (in press) suggested that researchers must consider a calling to be a dynamic phenomenon that changes over time and addressed the need for research examining calling in conjunction with possible antecedents and outcomes. Longitudinal research investigating the relation of calling and career development variables has only begun to emerge (Dobrow, in press; Dobrow & Tosti-Kharas, 2011; Duffy, Manuel, Borges, & Bott, 2011) and generally reported positive relations.

Hirschi and Hermann (2012) in their study of 269 German college students from different majors found that core self-evaluations (CSEs) were significantly related to the presence of calling, vocational identity achievement, and life satisfaction. This might mean that students' sense of calling in their career also depends on their positive evaluations of themselves, and the emergence of a calling in a career could be facilitated by having a positive self-view. In their findings the authors also confirmed that calling predicts greater vocational identity achievement and this seems to support theoretical assumption by U.S. authors that there is a

strong correlation between a higher degree of career decidedness, self-awareness, and goal clarity and the presence of a calling in one's career (Duffy & Sedlacek, 2007; Hall & Chandler, 2005; Steger et al., 2010).

Research directions in calling

The section below will enumerate some of the most frequently suggested research directions.

Fouad et al. (2006) recommend the expansion of knowledge of theoretically hypothesized paths among self-efficacy, outcome expectancies, interests, and choice in additional areas of career decision making, including a wide range of subject matters and populations.

Duffy, Allan, Autin, and Bott (2012) suggest that future studies on the relationship between living a calling should consider additional aspects of the relationship such as the existence of barriers that 'might prevent individuals from living out their calling and reaping the benefits of increased well-being' (p.42), and how they manifest in different populations; how individuals fulfil callings outside of work (e.g., through raising children; Oates, Hall, & Anderson, 2005); how calling in different life roles relates to well-being outcomes; and they posit that additional variables are at play in the mediation of the link between calling and life satisfaction.

Duffy, Dik and Steger (2011), (Doenges, 2011), as well as (Dobrow & Tosti-Kharas, 2011) propose an extension of the predictive relationship between calling and work-related outcome model to more of well-being in order to capture if, and why, calling might be related to life satisfaction and psychological well-being to a global level as they argue that cultural embeddedness is paramount in the formation of calling.

(Domene, 2012) found that self-efficacy partially mediated the relation between purposeful work and outcome expectations, and fully mediated the relation for the calling dimensions of search for purposeful work, presence of transcendent summons, and presence of a prosocial orientation. The pattern of findings suggests that the relation between sense of calling and expectations for a successful future occupational outcome is predominantly indirect, working through influencing students' occupational self-efficacy and that career commitment may represent a critical link between calling and work-related well-being.

METHODOLOGY

Structural equation modelling has been deployed to test the validity of the SCCT model when predicting significant relationships between the latent constructs of self-efficacy, outcome expectations and interest and the eventual mediating effect of the newly introduced latent construct of calling. The following hypotheses had been established and tested prior to the design and running of the model:

Table 1. List of hypotheses to be tested

<i>No.</i>	<i>Description</i>	<i>Correlation</i>
1.	Entrepreneurial calling positively influences entrepreneurial interest	CALLING -> INTEREST
2.	Entrepreneurial calling positively influences outcome expectations	CALLING -> OE
3.	Outcome expectations positively influence entrepreneurial interest	OE -> INTEREST
4.	Entrepreneurial self-efficacy positively influences entrepreneurial calling	SE -> CALLING
5.	Entrepreneurial self-efficacy positively influences entrepreneurial interest	SE -> INTEREST
6.	Entrepreneurial self-efficacy positively influences outcome expectations	SE -> OE

SURVEY

The basis for the data analysis was the Hungarian cohort of an international data set, the 2011 “Global University Entrepreneurial Spirit Students Survey” (GUESSS), initiated in 2003 by a German and a Swiss university surveying students at universities around the world bi-annually. GUESSS follows three major goals: a) to systematically record the entrepreneurial intentions and activities of students on a long-term basis across time and geographic regions, b) to provide the participating universities and countries with an assessment of the entrepreneurial spirit of their students and to identify individual and social factors that could help enhancing this spirit, and c) to observe the performance of the start-ups created by students (e.g. turnover, number of employees, innovation degree).

Originally, the survey has been administered by means of paper-based questionnaires translated to Hungarian from English and distributed to 70,717 students from 502 tertiary education institutions. Out of the total convenience sample, 5677 questionnaires were received, representing a 8 % response rate. The distribution of females in the N was 59.4 %, and the average age: 24.7 yrs. To ensure the validity of our analysis, we adjusted the dataset by carrying out a missing value analysis and applied case wise deletion. All latent variables use a “mode A” specification for their items (i.e., manifest or observed variables) in their measurement models, which is associated with reflective measurement (Hair, Ringle, & Sarstedt, 2011).

Measures:

SCCT theoreticians warn specifically for the matching the predictor and criterion variables. ‘Once the activity domain and dependent variables of interest have been identified, it becomes important to assemble, adapt, or design predictors that appropriately match the criteria, and one another, along salient dimensions, such as content focus, level of specificity, and temporal proximity’. It is equally important to tailor social cognitive constructs to the domain of interest, meaning that the strength of predictor-criterion relations is likely to reflect the degree to which predictor and criterion variables correspond with one another along such dimensions as content, context, temporal proximity, and level of specificity (Ajzen 1988).

The construct of *Calling* (CA) has been measured by the combination of sections 4 and 5 of the GUESSS 2011 questionnaire. Section 4 included the question ‘Please indicate your level of agreement with the following statements about your career choice intentions...’ (1=very unimportant, 7= very important), typical answers being: ‘This career choice intention is emotionally important for me.’ Section 5 contained the question: ‘How important are the following motives for your future work and career path?’ and items such as: ‘Follow a social mission’; ‘Follow an environmental mission’; ‘Grow and learn as a person’

Interest (INT) has been conceptualised as the combination of intent to start a business and the interest in doing so and has been measured by section 4. Respondents were given the option of choosing between a time range of starting a business immediately after graduation or a longer range of 5 years following their graduation. Respondents were requested to ‘Please indicate your level of agreement with the following statements about your career choice intentions...’, typical answers being: ‘I want to start a business in the next 5 years.’ and ‘The entrepreneurial career choice intention has a great personal meaning for me.’

The construct *Outcome expectations* (OU) has been derived from section 5, based on the question: ‘How important are the following motives for your future work and career path?’ (1=very unimportant, 7= very important) and included 17 items, among which: ‘Earn a larger personal income’, ‘Financial security’, ‘Build business children can inherit’, ‘Continue a family tradition.’

Finally, the construct of *Entrepreneurial self-efficacy perceptions* (SE) has been measured by section 12 'Please indicate your level of agreement with the following statements' and included items like: 'I can pretty much determine what will happen in my life'; and section 13: 'Please indicate your degree of certainty in performing the following roles / tasks.', with typical items like: 'Make decisions under uncertainty and risk'; 'Manage time by setting goals'; and 'Take responsibility for ideas and decisions'.

PLS-SEM

The goal of predictive modelling used in the research has been to establish a theoretically grounded model that has high predictive power, and it differentiates itself from traditional CB-SEM modelling viewed as explanatory and confirmatory tools (Sarstedt, Ringle, Henseler, & Hair, 2014). Prediction relates to a situation where a theory leads to the forecast of some relevant outcome (Bagozzi & Yi, 2012), its concept originating from an econometric perspective and is defined as "the estimate of an outcome obtained by plugging specific values of the explanatory variables into an estimated model" (Wooldridge 2003; p. 842). The coefficient of determination (R^2) is typically used as a criterion of predictive power (Hair, Ringle, & Sarstedt, 2011) Hair et al., 2012; Hair, (Henseler et al., 2014) Henseler et al, 2011; (Sarstedt, Ringle, & Hair, 2014) Sarstedt et al, 2013; Sarstedt et al, 2014).

For the estimation of our modified Entrepreneurial Calling model with empirical data, we use the PLS path modelling method (Hair, Sarstedt, Ringle, & Mena, 2012) and the SmartPLS 2.0 software application (Ringle et al., 2005). Table 1 presents the results on the aggregate data level. To analyse and evaluate the PLS path modelling results, we follow recommendations by Henseler, Ringle, and Sinkovics (2009) and Hair et al. (2012). Measurement model parameter estimates and diagnostics provide evidence for the reliability and validity of the reflective construct measures. All multi-item scales exhibit composite reliability (rc) values well above the commonly suggested thresholds of .70 for rc and there is argument for the acceptance of less than .50 for the AVE average variance extracted (AVE) values for discriminant validity (Chin, Bagozzi) .

FINDINGS

Outer model analysis

The quality of the reflective measures was assessed by the convergent validity and the discriminant validity of the latent variables.

Table 1. Outer (exogenous) path analysis

	<i>CALLING</i>	<i>INTEREST</i>	<i>OUTCOME EXPEC- TATIONS</i>	<i>SELF- EFFICACY</i>
CA_1Environmental mission	0.6830			
CA_2(right after studies) emotional attachment	0.6781			
CA_3Social mission	0.6483			
CA_4Grow and learn	0.6086			
CA_5Fulfill my dreams	0.6015			
INT_1(5yrs after studies): personal meaning in starting a business		0.8661		
INT_2(Right after studies) Challenge in starting a business		0.8189		
INT_3(Right after studies) personal meaning in starting a business		0.8136		
OU_1Business opportunities			0.7464	
OU_2Be my own boss			0.6649	
OU_3Higher position			0.6371	
OU_4Innovation			0.6368	
OU_5Idea development			0.6322	
OU_6Recognition			0.6165	
OU_7Children can inherit my business			0.6021	
OU_8Flexibility of personal life			0.5901	
OU_9Income			0.5786	
OU_10Financial security			0.5396	
OU_11Role model			0.4398	
SE_1Reduce risk				0.7289
SE_2Lead my company to success				0.7273
SE_3Start firm				0.7134
SE_4Decide under risk				0.7067
SE_5Take calculated risks				0.7037
SE_6New product development				0.6941
SE_7New idea development				0.6482
SE_8Financial analysis				0.6464
SE_9Responsibility for ideas, actions				0.6338
SE_10Time management				0.6302
SE_11Determination				0.5558

Results summary of the model

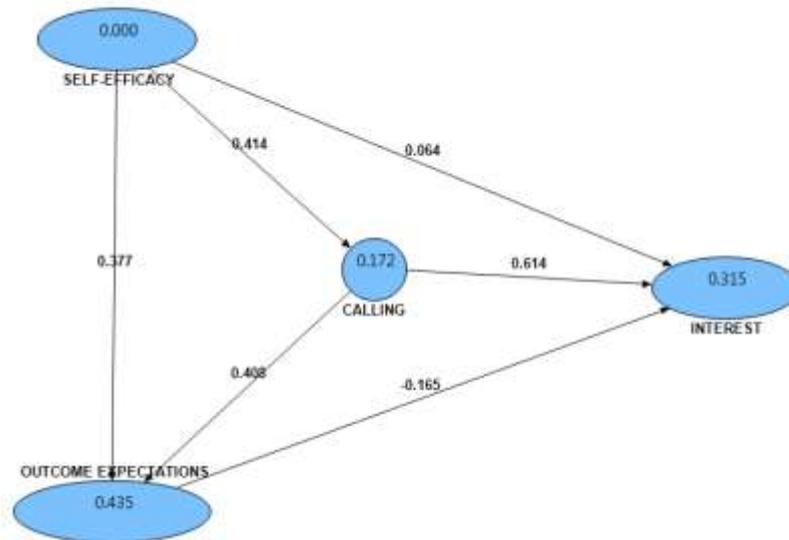


Figure 1. Structural model of the Entrepreneurial interest as mediated by calling

Evaluation of the prediction-oriented PLS path modelling method's results for the structural model centres on the R^2 values (Table 2). The key target construct, 'Entrepreneurial interest', exhibits a moderately high R^2 value of .315 (i.e., the Entrepreneurial Calling model explains overall Entrepreneurial interest by 31.5%), whereas 'Outcome expectations' are explained by 43.5 % ($R^2=0.435$). The standardized path coefficients provide the basis for assessing the relative importance of relationships in the Entrepreneurial Calling model. To test whether path coefficients differ significantly from zero, we calculated t-values using a bootstrapping routine (Henseler et al., 2009). The analysis substantiates that all relationships in the structural model have statistically significant estimates. Internal consistency displayed suggested minimum levels ($\alpha > 0.65$; Hair et al., 2012) for all latent constructs.

The first criterion to be evaluated is typically internal consistency reliability. The traditional criterion for internal consistency is Cronbach's α , which provides an estimate of the reliability based on the inter-correlations of the observed indicator variables (Hair et al., 2013). As Cronbach's α assumes that all the indicators are equally reliable, and is sensitive to the number of items in the scale and generally tends to underestimate the internal consistency reliability, SmartPLS model uses another measure which is called composite reliability, its recommended threshold being 0.60 to 0.70 in exploratory research and in more advanced stages or research, between 0.70 and 0.90. As Table 2 shows, the individual constructs of the measurement model satisfy the threshold criteria for both Cronbach α and composite reliability, respectively. The other measure of measurement model assessment is convergent validity, the extent to which measures correlate positively with alternative measures of the same construct, the logic being that items that are indicators of a specific construct should converge or share a high proportion of variance. In the current measurement model, both the outer loadings of the constructs and the average variance extracted (AVE) satisfy the threshold criteria of $AVE > 0.40$ stipulate for exploratory research. Discriminant validity has been assessed by examining the cross loadings if the indicators and specifically, the indicators' outer loading on the associated construct should be greater than all of its loadings on other constructs.

Table 2. Structural model quality overview

CONSTRUCTS	AVE	Composite Reliability(rc)	R ²	Cronbach's α
CALLING	0.3787	0.7822	0.1717	0.6714
INTEREST	0.6942	0.8719	0.315	0.7813
OUTCOME EXPECTATIONS	0.3927	0.8652	0.4354	0.8295
SELF-EFFICACY	0.4538	0.9009	0	0.8794

Indirect effects

In order to examine the significance of indirect effects, we followed the bootstrapping recommendations by Hair et al. (2014) and ran 5000 bootstrap samples at the confidence interval of $p < .001$. The randomly generated samples generated the indirect effects for each mediation path, and calculated product terms to determine significance. More specifically, the mediation paths included (1) self-efficacy to interest as mediated by calling, (2) self-efficacy to outcome expectations as mediated by calling and (3) outcome expectations to interest as mediated by calling. Results of the bootstrapping procedure are presented in Table 3.

Table 3. Structural model latent variable correlations

Relationship	Path coefficient	Strength	t-value	total effects	Hypothesis accepted
CALLING -> INTEREST	0.614	strong	45.658***	43.1706***	yes
CALLING -> OE	0.408	moderate	30.1304***	30.1304***	yes
OE -> INTEREST	-0.165	moderate	9.8501***	9.8501***	no
SE -> CALLING	0.414	strong	33.6244***	33.6244***	yes
SE -> INTEREST	0.064	weak	4.485***	16.2982***	yes
SE -> OE	0.377	moderate	28.3276***	50.7985***	yes

***=Significant at 0.001 level

DISCUSSION

The model as a whole, was a good fit, which pointed to important findings. First, it supported the basic proposition of SCCT by means of significant predictive relationships between latent constructs: self-efficacy significantly predicted outcome expectations, self-efficacy and outcome expectations significantly predicted interests. Second, calling was found to mediate the relation of self-efficacy to interest and the relation of self-efficacy to outcome expectations. Calling did not mediate the relations of outcome expectations to interest, while the predictive relationship between outcome expectations and interest prevails.

The correlations revealed outcome expectations to be negatively related to interest which contradicts previous research (Domene 2012; Duffy et al., 2011; Fouad & Guillen, 2006;). Domene (2012) found that calling influences career outcome expectations only in an indirect way through self-efficacy, rather than in both directly and indirectly, as would be expected from SCCT. Overall, what ensued from the model tested in this survey is that students' sense of calling influences their career outcome expectations primarily through its relation with their perceptions of efficacy, which in turn is associated with their expectations for a successful career outcome. These findings parallel the results of Duffy and colleagues' (2011) and

Domene's (2012) examination of the relation between calling and academic satisfaction, where the influence of calling was also fully mediated by self-efficacy and work hope.

The negative predictive relationship of outcome expectations to interest needs further exploration. This curious result can be the effect of country-specific conditions, cultural embeddedness, just like Bandura (1986; 1997) explained, and its full exploration was beyond the scope of this study. It may well be that the students' interest in starting an enterprise is not influenced by the societal perception of the entrepreneurial career (which, in the countries of Central and Eastern Europe is rather negative), but their inner drive to succeed or act as change agents to contribute to the betterment of their communities (Horváth, 2012). It may well be that the students are inclined towards the entrepreneurial career despite the negative picture of the entrepreneur. Calling has proved to be much more influential in their intent to start an enterprise than outcome expectations. A partial explanation can be provided by the short-term orientation of these cultures and the generally low level of trust and confidence levels (Bauer & Szabó, 2011).

LIMITATIONS AND FUTURE RESEARCH

The results of this study must be considered in the understanding of several limitations, which can be useful in informing future research directions. First, this study was limited in that the data was cross-sectional ruling out suggestions of causality. Future research should include longitudinal data to confirm assumptions about the direction of model paths.

Second, the study was country-specific and thus cannot be generalised. Third, the usage of archival data sets limits the researcher in the most adequate deployment of variables in the measurement model. To remediate this issue, Lent (2006) advises several methods to address measure fit. Forth, the study's sample population being students, without any experience of the entrepreneurial career, model validity should be tested on already established entrepreneurs.

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Social interaction and the gestation of Academic Entrepreneurs

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Social interaction and the gestation of Academic Entrepreneurs

The role observing and learning entrepreneurial behaviour play on academic researchers' decision to commercialise research

Abstract

Does the propensity of an academic researcher to commercialise knowledge through firm formation depend on colleagues showing the way? In this paper, we directly test the hypothesis that *university employed researchers' entrepreneurial behaviour, here defined by firm ownership, and named 'academic entrepreneurs', influence collegial researchers to adopt the same behaviour.* A number of recent entrepreneurship studies indicate that the decision to become an entrepreneur is influenced by observing and learning entrepreneurial behaviour from others. Given that social interaction is a central part of academic researchers work, we expect such interaction to be significant for transferring entrepreneurial behaviour among researchers in the academic context. Current research has shortcomings by being too general in exploring the influence of the work environment, not addressing the specific mechanisms of social interaction, nor attempting to isolate the effect of social interaction on firm formation among academic researchers. We address this by exploring a large data set provided by Statistics Sweden (SCB) on 14886 individual researchers at 29 Swedish universities. Our results show that social influences have a significant effect on academic entrepreneur gestation, indicating strategy implications for university management, policy makers, and others working to create entrepreneurial universities.

Keywords: academic entrepreneurs, social interaction, peer effect

1. INTRODUCTION

The ability to convert new scientific knowledge into commercial products has become increasingly essential for advanced industrial economies (e.g. OECD, 2003; Klofsten and Jones-Evans, 2000). Universities are recognized as important sources of new knowledge (e.g. Etzkowitz et al, 1998; Acs, Audretsch & Feldman, 1992; Feller, 1990), and it is therefore evermore expected, on a global scale, that universities can and should stimulate economic growth by innovation and knowledge commercialization (Etzkowitz et al., 2008, 2000). There is growing concern that the R&D resources of universities are underutilized (Van Dierdonck & Debackere, 1988), and there is therefore a need to better understand the underlying mechanisms for commercialisation of university research, and thus how the commercialisation rate can be increased (Toole and Czarnitzki, 2007). This concern and interest is shared among not only researchers but also university managers, policy-makers and others. Government efforts and university policies are increasingly put into place in attempts to make universities and their researchers more entrepreneurial (OECD, 2005; Shane, 2004).

Commercialization of academic knowledge is researched within the field of *academic entrepreneurship* (e.g. Henrekson and Rosenberg, 2001; Klofsten and Jones-Evans, 2000), originally defined strictly as the start-up of firms with intellectual property rights spun from the academia (e.g. Shane, 2004). More recent research has opened up for a more liberal understanding of the definition also to incorporate other channels of commercialisation such as patenting, licensing, and consulting (Henrekson and Rosenberg, 2001). A central research concern is how the academic knowledge production is used to generate innovations, i.e. the focus has been on the functioning of various commercialisation channels. Academic researchers are becoming more active in commercialising their results, especially patenting and licensing has

grown over the recent decades, mainly explained by changes in policies⁵³. In addition, commercialisation through firm formation is growing and increasingly viewed as an important channel for bringing research to the market. The focus has so far mostly been on technology transfer offices, incubators or various university incentives, specific technological fields or on research organisation etc. However, the literature in the field provides little information about the determinants for academic researchers' decision to become academic entrepreneurs in general, and by firm formation in particular (Krabel and Mueller, 2009; Rothaermel et al., 2007).

Given that social interaction, including seminars, research collaborations, co-authorships, etc. is an important and inevitable part of academic work, it is reasonable to expect that the academic work-environment in general and academic colleagues' behaviour in particular, have a strong influence on academic researchers' behaviour, especially those of a younger age. In this paper, we define the academic entrepreneur as the university-employed firm owner. We investigate if the entrepreneurial behaviour of academic researchers has an effect on collegial academic researchers also to commercialise their research and knowledge through firm formation, i.e. to become academic entrepreneurs.

In this paper, we draw on perspectives of social interaction theory to frame and describe how social relationships and institutions in which the individual is a part, influence entrepreneurial behaviour. In this view, starting a firm is not an independent and isolated action of the individual but rather influenced by the social context, and thus by, the individuals with whom she/he interacts. In applying this argument to academic researchers, we reason that the social relationships with collegial academic researchers and the academic institution influence the entrepreneurial activities.

A growing stream of entrepreneurship literature examines the role social interaction, and effects of peers, in particular, have on entrepreneurial behaviour (Aldrich and Ruef, 2006; Thornton, 1999; Saxenian, 1994). It has been shown that peers in the work environment has a significant effect on other individuals' decision to become entrepreneurs (e.g. Nanda and Sorensen, 2010, 2006; Gianetti and Simonov, 2009; Stuart and Sorensen, 2005; Kenney & Goe, 2004; Sorensen and Audia, 2000). However, this research has not been able to identify, clearly outlined and separated peer effects, which implies that the conclusions are limited to the general effects of the social context. The peer effect mechanism is still not well understood. The few studies focusing on the influence of academic peer effects on academic researchers decisions to become entrepreneurs (see Kacperczyk, 2012; Kenney and Goe, 2004; Louis et al., 2001; Stuart and Ding, 2006; Tartari et al., 2014) suffer from the same shortcomings although they all indicate that academic researcher peers play a significant role in determining individual entrepreneurial behaviour of academic researchers. Nevertheless, earlier research in the field suggests that pro-entrepreneurial attitudes and entrepreneurial behaviour of academic peers' (hereafter referred to as colleagues) along with prevailing norms has a strong positive *social pressure* effect on the entrepreneurial propensity of academic researchers. Moreover, research have found social interaction, defined as social networks, to be a key determinant for innovation and precondition for academic entrepreneurship defined by firm formation (Grimaldi et al., 2011, Lockett et al., 2003).

The purpose of this paper is to analyse the role academic entrepreneurs' play in collegial academic researchers' decision to also become academic entrepreneurs.

The central argument in this paper is that entrepreneurial colleagues, in various ways, induce others to become entrepreneurs. First, colleagues will affect an individual's entrepreneurial

⁵³ For example, the implementation of the 1980 Bayh-Dole Act in the U.S.

decision by making her/him more entrepreneurially minded. Being exposed to colleagues' entrepreneurial activities should naturally defuse the image of entrepreneurial endeavours as risky business and reduce uncertainty, making the entry to entrepreneurship less emotionally difficult. Second, entrepreneurial colleagues provide insight to business practicalities; function as an information source for information on entrepreneurial opportunities. They can function as idea evaluation filters, which might increase the commercial viability. Third, entrepreneurial colleagues are most likely to be part of useful and resourceful networks within and outside the profession and the workplace that would facilitate the entrepreneurial process of the potential academic entrepreneur in the making. We argue that the effects of social interaction with entrepreneurial colleagues not only influence the propensity to become an entrepreneur but also actually trigger an individual's entry to entrepreneurship.

Understanding the role that entrepreneurial academic colleagues' play in the academic researcher's decision to become an entrepreneur is important for several reasons. Primarily, new empirical knowledge may have strong implications for university strategy and management. If academic peer effects show significant to producing academic entrepreneurs, it means that by recruiting productive academic entrepreneurs a university may increase the level of academic entrepreneurship by creating spillover effects. Thus, this would be one feasible way in which the university management can work to make the university entrepreneurial. Second, from a scientific point of view as there exists little empirical knowledge on what role social interaction with entrepreneurial work colleagues imply for entrepreneurship at large and for academic entrepreneurship in particular. Third, for policy makers, to be able to form more suitable policies that utilizes the "multiplier effect"⁵⁴ to spur academic entrepreneurship or even other initiatives concerning the university systems at large. Forth, from a general perspective of economic growth to better understand the transformation of academic knowledge into commercial goods and services through academic entrepreneurship.

We address our research question by exploring a large database matching university personnel with individual characteristics provided by Statistics Sweden. The researchers' decision to enter entrepreneurship is defined as a function of the number of colleagues that are academic entrepreneurs. We identify and define academic entrepreneurs as those individuals that are firm owners are still employed and getting their main income from the university. We explore the academic social environment focusing on the specific effect of academic peers. We address the identification and reflection problems involved in analyses of peer effects by controlling for a large set of confounding factors at the individual level.

With this paper, we contribute directly to the literature on academic entrepreneurship by adding to the few quantitative studies directly examining the relationship between academic colleagues' entrepreneurial behaviour and the gestation of academic entrepreneurs.

This paper is organized as follows: In section 2, we introduce the theoretical framework that we find important to develop our hypotheses. In section 3, we present our data, empirical approach, and results. Section 4 concludes.

⁵⁴ In case of a clear peer effect, colleagues with entrepreneurial experiences and knowledge would transfer that to fellow researchers whom then would be more likely to become academic entrepreneurs. In addition, this would indicate that recruiting faculty members that are productive in commercializing their research would likely influence the academic milieu and fellow researchers to adopt the same behaviour.

2. Social Interaction, Entrepreneurial Mind-Set and Entry

In this chapter, we develop our theoretical arguments linking social influences to academic entrepreneurship. This is followed by a section where we present the specific characteristics and the environmental setting of the academic milieu. We present arguments for why social interactions with colleagues are significant for entrepreneurial gestation in academia.

2.1 Workplace Interaction and Entrepreneurship

There are many circumstances in which social interaction is likely to influence people's behaviour. As individuals we tend to benchmark with people we are similar to, which functions as a reference group⁵⁵ on how to act. The need to compare and confirm with similar others is especially significant when we are unsure of what is expected, encouraged and accepted behaviour (Bandura 1986; Kemper, 1968). If many people in our reference groups engage in certain behaviour we may experience social pressure⁵⁶ to comply with that behaviour. We observe and learn from each other driven by conformity and the strength of the social pressure is a function of the frequency of interaction and the proximity to those we interact with (Moog et al., 2014; Bandura 1977). Social norms and information exchange shape these interactions and influence individual behaviour in subtle, dynamic and complex ways.

A person typically interacts socially directly and indirectly with many people that potentially can influence her/his behaviour, attitudes and motivation. This means that the boundaries of the people influencing an individual's behaviour are difficult to pin down. Friends (e.g. Evans et al. 1988), neighbours (e.g. Gianetti and Simonov, Andersson and Larsson, 2014), people at the sports club, and work colleagues (e.g. Nanda and Sorensen, 2010) etc. may all play a role. These influences may orientate an individual on performance in school, and their opinions regarding drug use and politics or their preference towards a certain fashion brand etc. In this paper, we focus on the potential influence social interaction with entrepreneurial work colleagues which we believe play an important role in an individual's decision to become an entrepreneur. For methodological reasons we aim our efforts to those social interactions we can measure. Thus, social interactions of collegial nature framed by the employing university, scientific discipline, and of close spatial proximity. For this, we find strong support and argue below.

First, a large share of most employees' time is spent at work interacting with colleagues, which increases the likelihood that various influences will work. Research findings propose that social interaction drive entrepreneurial behaviour mainly by transferring information and motivation (Gianetti and Simonov, 2009; Gompers et al., 2005; Nanda and Sorensen, 2010; Sorensen and Audia, 2000; Stuart and Ding, 2006). That leads us to the second reason: entrepreneurial work colleagues transfer pro-entrepreneurial *attitudes* and *values*. By functioning as *role-model entrepreneurs*, colleagues who are not entrepreneurs may self-reflect; "if she can do it, so can I" which would increase the individual's expectation concerning her/his entrepreneurial ability (Gianetti and Simonov 2009; Nanda and Sorensen, 2010, Stuart and Ding, 2006). This way an entrepreneurial opportunity becomes more attractive and achievable which is crucial to the individual's decision to become an entrepreneur. Thus, the likelihood of an individual's choice to become an entrepreneur is dependent on that individual's expected entrepreneurial ability. Indeed, research shows that the ability expectation is a critical determinant and a robust predictor for new firm formation (Townsend et al., 2010).

⁵⁵Reference group is a group to which individuals are comparing themselves, not necessarily themselves belonging to that group.

Third, work colleagues may trigger entrepreneurial behaviour by transferring information through social interaction (e.g. Gianetti and Simonov 2009; Gompers et al, 2005; Nanda and Sorensen, 2010; Sorensen and Audia, 2000; Stuart and Ding, 2006). Studies indicate that there is a general spillover effect of entrepreneurial knowledge from colleagues' entrepreneurial experiences (Gompers, Lerner and Sharfstein, 2005; Saxenian, 2000). Although also prior general and specific work experience may similarly play a role. This would have an impact on what knowledge; social contacts and resources potential entrepreneurs have access to, as well as it partly shapes the thoughts and ideas concerning entrepreneurship (Shane 2004; Sorensen and Audia, 2000). The entrepreneurship literature increasingly emphasizes the significance of knowledge, skills and other resources acquired in the workplace prior to entrepreneurial entry (e.g. Sorensen, 2007). Indeed, Nanda and Sorensen (2010) found that individuals are more likely to enter entrepreneurship if their co-workers have had prior entrepreneurial experience explained by that the entrepreneurial colleagues provided an pro-entrepreneurial environment and information necessary to reach the entrepreneurial decision.

Forth, work colleagues often function as sources of various necessary resources, provide practical knowledge, give opinions and advice, and may provide useful referrals (Stuart and Ding, 2006). It may be access to information about entrepreneurial opportunities in the commercial sector or referrals to the individuals and organisations administering necessary start-up resources. Certainly, through peers the practical entrepreneurial expertise may be transferred with the benefit of lowering the cost components associated with firm formation. Surely, much research show that access to resources is central to entrepreneurial entry and that entrepreneurship rates possibly vary depending on that necessary resources and information can be found among the people with which an individual interacts (Gompers, Lerner, and Scharfstein, 2005; Sorensen and Audia, 2000).

2.2 Colleagues, work environment and the entrepreneurial decision

In this section, we present the academic researcher's work characteristics and work environment. We define the academic researchers' colleagues and discuss why the mechanisms of social influences presented in the previous section especially concerns entrepreneurial behaviour among academic researchers.

It is an observable fact that academic researchers are involved in a growing variety of social and intellectual interactions. These interactions may involve seminars, collaborative research projects, co-authorships, presentation of papers at workshops and partaking in conferences, collaborations with industry, government, and academic entrepreneurs that have left academia, incubator and science park activities etc. The social interactions also involve professional meetings and informal commentary from colleagues, journal referees, etc. The common nature of these interactions is that they are shaped in the intellectual and cognitive interface influenced by norms, previous knowledge, discipline belonging, the span and depth of work experiences etc. but also by hierarchical structures, such as professional ranking. These interactions are likely to make academic researchers habitual about, but also dependent on the intellectual input and social interactions with colleagues. Indeed, Laband and Tollison (2000) studied the practice and value of intellectual collaboration and social interaction among academic colleagues in production of scientific papers. They found that co-authored papers exceeded sole-authored papers by 23 percent and interestingly that any paper on average had 15 *informal* co-writers. Their results point out the significance of social interaction to academic research production. Similar findings emphasize the importance of personal relationships in terms of making collaborations in the university-industry interface smooth (e.g. Zucker et al., 2002).

The social interactions may take place within and outside the academic researcher's home department, university, region and nation. Thus, the academic colleagues of academic scientists

span over the borders of research discipline, department, university, and geography. We define the academic scientists' peers as individuals of similar or higher rank, performing similar work tasks, with whom the academic scientist interacts socially inside and outside the work place. Thus, an academic peer can be local or non-local, a researcher of the same or other research disciplines. By merely observing academic colleagues entrepreneurial activities the potential academic entrepreneur make a passive start to entrepreneurial entry (Ardichvili et al., 2003) by searching for her/his own entrepreneurial opportunity, driven by motivation to start her/his own firm. Thus, entrepreneurial activity is triggered by alertness to external signals and the existence of entrepreneurial opportunities.

2.2.1. Entrepreneurial Incentives

Traditionally, the academic researcher strived to make scientific discoveries and to be first to communicate this, rewarded by the scientific community's recognition through publications, citations, awards etc. (Merton, 1942). This in turn may allow career advancements, increased pay and more possibilities to research funding. Although commercialising academic knowledge is increasing and ever more expected, the incentives for academic researchers' are not clear. Etzkowitz (1998) among others has emphasized financial rewards from firm revenue or the university. This is supported in studies on patenting (e.g. Owen-Smith and Powell, 2001; Thursby et al, 2001) Other studies suggest that founding of a new company may be an appealing strategy for younger scientists, such as fresh PhD graduates and research assistants, whose career perspectives are limited but wish to continue to do research in close contact with their university (Franklin et al., 2001).

However, given our definition of the academic entrepreneur, implying a continued university employment, it is a matter of making extra money on the side, rather than it is about the relative payoff to become a full time self-employed entrepreneur. Thus, financial rewards may be less of a determinant for the individual's decision to become an entrepreneur. On the other hand, a study on UK academic researchers commercializing their knowledge by consulting through their own firms showed that the consulting brought in a fair amount ranging from 5000 pounds to a doubling of salaries (Bains, 2005).

Other potential incentives discussed in the literature are the desire to be like peers, higher intellectual satisfaction, improved reputation, and as a means for career advancement (e.g. Göktepe-Hulten and Mahagaonkar, 2010) However, getting involved in entrepreneurial actions almost always leads to costs, financially or in terms of decreasing academic merits due to time spent on commercial activities. It may also be that the intellectual foundations of academic entrepreneurs' firms are complex and not easy to transfer and may vanish by doing so, and this may work as a disincentive.

Incentives may also arrive from the beneficial position entrepreneurial colleagues provide. By transferring entrepreneurial knowledge and positive attitudes, the risks naturally anticipated with entrepreneurial endeavours are reduced. This may ease the academic researchers' decision to become an entrepreneur. Thus, entrepreneurial academic peers may help in various ways from sharing experiences, practical advice, and resources as well as offering access to a useful individuals, fitting labour, and contacts with financiers, cheaper facilities, supplies etc. The social interactions with entrepreneurial academic peers are likely to increase the academic researcher's expected entrepreneurial ability. This would reduce the general uncertainty and perhaps be the final influence for taking the necessary decisions. Indeed, research show that individuals with high expected ability are more likely to become entrepreneurs.

2.2.2 *Competition and Secrecy*

It would certainly be naive to assume that academic entrepreneurs wholeheartedly or automatically would give out information or assist colleagues striving to start a firm on their own. Of course, there are of both elements of gain and competition when colleagues also enter entrepreneurship, especially when the academic entrepreneurs are catering to the same audience within the same discipline of knowledge. Certainly, academia is highly competitive with academic researchers striving to be the first to publish, fighting over research funding etc. Being secretive and withholding information is natural in such an environment. Commercialization of academic knowledge in the university-industry interface is increasingly handled with secrecy for e.g. strategic reasons such as “first mover advantages” preventing the potential commercial value from being lost through general diffusion of the original research. Interestingly, Louis et al. (2001) found that the more a faculty member is involved in entrepreneurial activities, the more likely it is that he or she encountered secrecy, either by being denied or by denying others access to research results.

However, we believe that much of the social influences from colleagues is transferred by observing and learning, influenced by a prevailing positive attitude towards entrepreneurship and stimulated by the sublimely virtue of spill-over effects tacit characteristics. Similarly, also examples of failing entrepreneurs have shown to have a positive influence on entrepreneurship as research on e.g. individuals’ with one or both parents having been entrepreneurs, show that even with a failure outcome the chances of the children becoming entrepreneurs increased (Sorensen, 2007).

In sum, academic collegial peers function as a reference group in which the individual seek behavioural guidance, especially when being uncertain on how to act (Bandura, 1986). Individual’s observe the choices of similar others to form their own values and choices (Sorensen and Audia 2000). Applied to the context of academic researchers the peer pressure to become an entrepreneur will increase with the number of academic entrepreneurs among the academic colleagues. Formulated as an hypothesis,

- H1.** The academic researcher’s decision to start a firm can partly be explained by how many others researchers in their local social work environment that are entrepreneurs.

2.2.3 *Hierarchy and role models*

Hierarchical structures linger in Academia. Academic researchers are by necessity strategically competitive in pursuit of the few positions available on the career ladder. This naturally leads to social pressure and a constant benchmarking with academic peers. The hierarchical organizational system is straightforward. Examples are the PhD’s answering to their professors; full professors are under the department head and principal but above the associate and assistant professors and so on. Prestigious researchers also enjoy a recognized status and are thereby likely to cause significant social impact on academic colleagues. Behaviours of higher-ranking academic researchers are likely to have an even larger influence on academic researchers’ behaviours. Academic researchers in management roles are important for the local culture and are powerful role models. They also represent the management by implementing management initiatives and directives and exercise power by being in charge of promotions etc. In times of uncertainty, they become a clear guide to accepted and rewarded behaviour. Interesting and relevant findings for our study include Stuart and Ding (2006) that found academic researchers to be more likely to become entrepreneurs when they worked in departments where colleagues had previously become entrepreneurs and especially if they were prestige academic researchers.

H2 *The propensity of an academic researcher to decide to start a firm is stronger when higher-ranking academic researchers at the department are academic entrepreneurs.*

2.2.4 Cognitive and spatial proximity

We return to the reasoning that academic researchers' colleagues are located over levels of discipline, hierarchy etc. and crossing spatial (regional, national, international), department, and university borders. Consequently, the academic researcher is influenced by social interactions shaped in a variety of formal and informal institutions; rules and regulations, reward incentives, policies, with different entrepreneurial attitudes, normative expectations and so forth. The academic scientist is part of a variety of social interactions that naturally links her/him to these different levels. This also implies that an entrepreneurial academic colleague may be active in a different set of formal and informal institution (another university, region or country etc.) than the academic researcher. This way, the entrepreneurial experience, practical knowledge etc. may therefore be of little use to the potential academic entrepreneur, and the social influence is therefore likely to have little effect. Since the academic peers are found in various levels and settings, the academic researcher is likely to enjoy access to non-redundant⁵⁷ and complementary information but also reference groups supportive of commercializing academic knowledge (Stuart and Ding, 2006). In addition, the frequency of social interaction is likely to be higher with academic peers in close spatial proximity such as at the department and university level (Festinger, 1954).

2.2.5 Academic Networking

Technological advances such as aircraft travelling and IT innovations like e-mail and the Internet has had a massive impact on society as a whole but also to Academia and science in specific. This development has facilitated long-distance travelling by cost and convenience and has over time made international collaborations, staff mobility, and conference trips etc., a frequent and normal part of academic researchers' everyday life, no longer a privilege of the absolute elite. Moreover, seminars, collaborative research projects, co-authorships, data collection, science diffusion etc. has all been made significantly more efficient with these new technological advancements. By being part of research collaborations and networks, researchers may get access to complementary expertise (also interdisciplinary), access to resources, acquire prestige, visibility and recognition (Bozeman and Corley, 2004). This may broaden their scientific perspective, but is also likely to increase the chances of identifying novel ideas (Ambos et al., 2008). Similarly, Bercovitz and Feldman (2008) showed that academic researchers' with affiliations with a range of different academic departments were more likely to commercialize.

At the university level, the academic researcher is influenced by the prevailing (e.g. entrepreneurship) attitudes. This includes not only attitudes towards commercialization of academic knowledge, in general, but also attitudes and entrepreneurial activities such as collaboration with industry, incubating spin-offs etc. Some universities are more pro-entrepreneurial than other in terms of attitudes and the establishment of support mechanisms. An academic researcher's entry to entrepreneurship is likely to encounter fewer barriers in universities that previously have spawned academic entrepreneurs due to prevailing pro-entrepreneurial culture, experience and expertise (Kenney and Goe, 2004). Kacperczyk (2012) showed that the decision to start a firm was impacted by socially transmitted entrepreneurship among people sharing prior education affiliation. Interestingly, this was amplified among same-university peers, especially when sharing a degree or having studied at an overlapping time period. However, the study also showed that the propensity to become an entrepreneur decrease

with spatial distance to university peers and that social proximity acts as an important trigger of social influences in entrepreneurship. This finding goes along with Festinger's (1954) claim that influences of social interaction are strengthened by spatial proximity.

Academic researchers collaborate increasingly (Stuart and Ding, 2006) and with collegial peers that are disciplinary rather than spatially close (e.g. Hamermesh and Oster, 2002). We believe that the interaction between academic researchers at a university is a function of cognitive proximity. The literature on cognitive proximity has long argued that the chances for interactions between individuals and organisations depend on cognitive proximity. Individuals have cognitive proximity when they share the same knowledge foundation and expertise. This is expected to facilitate communication and learning between individuals in social interactions (Nooteboom et al., 2007). In rough terms we can argue that in academic research contexts this means that in disciplines that are cognitively close, we expect more interaction and collaboration and so the effect of entrepreneurial colleagues to be stronger. Research has shown that cognitive proximity is a significant factor for R&D collaborations to work. Although, too much cognitive proximity works against the creation of novel ideas, too much cognitive distance reduces the chances of common understanding (Nooteboom et al., 2007).

3. Data and Empirical Approach

3.1 Data

The basic data is provided by Statistics Sweden (SCB), containing audited register data on all Swedish individuals aged 25-64. This data is from year 2005 and holds rich information on observables such as age, gender, education etc. The dataset also enables us to identify academic entrepreneurs by employment status and business ownership. Academic entrepreneurs are defined as individuals who are employed by a university but also are business owners in sole proprietorship or an incorporated business. We limit the sample to individuals with a permanent position. The firms may or may not have any employees. These steps result in a dataset tracking 14886 individuals in 29 universities. The finalized dataset excludes universities of significantly smaller size of divergent orientation.

3.2 Empirical Approach

Are social interaction effects in entrepreneurship an empirically relevant determinant for academic researchers to become academic entrepreneurs? In order to test this we model individuals' decisions to engage in entrepreneurship. We set up a Logit model with which we estimate the influence the fraction of entrepreneurs in an individual's workplace has on the probability that has on that individual to become an entrepreneur.

3.2.1 Variables

Various ordinary *individual* characteristics that may influence on the decision to become an entrepreneur are included: age, gender, marital status and children, years of schooling, education, degree, and immigration status. The fraction of academic entrepreneurs in the workplace at the university level and department level are our variables of main interest. The university level variable is defined as the share academic entrepreneurs of the total university employees of interest stated above. At the department level the variable is defined by research discipline at a specific university. The intuition is that the larger the share academic entrepreneurs in the university level or department level, the higher the likelihood that the individual academic researcher observe and learn entrepreneurial behaviour and make the decision to become an entrepreneur. The marginal effect of the density of academic entrepreneurs is expected to fall as the density rises to a point where additional academic entrepreneurs has little or no effect on academic researchers decision to become entrepreneurs.

4. Results

Table 1 presents the summarized results from a series of logit regressions. The regressions included variables described in section 3 as well as dummy variables. The correlation between many variables made it necessary to run the data in sequences.

Academic Entrepreneur (AE)	Coef.	Std. Err.	P>z	Interval]
	-			-
Gender	.4597351	.0490482	0.000	.3636025
Age	.0050609	.0026168	0.053	.0101897
FractionAE/Discipline/University	.0230139	.0078111	0.003	.0383233
FractionAE/Researchfield/University	.017586	.0057575	0.002	.0288706
Junior Lecturer	.114387	.0038218	0.042	.0675233
Senior Lecturer	.044598	.0057645	0.037	.0945678
Professor	-.00146	.0787565	0.008	.0878456

From the results we can observe the following. Being of male gender increases the propensity of becoming an academic entrepreneur. Likewise increases the chances for firm formation as the individual gets older. The core question, if the propensity of becoming an academic entrepreneur increases with the number of/or proportion of department colleagues (similar scientific discipline) being academic entrepreneurs show highly significant. Also academic entrepreneurial colleagues within the same or similar research field, but not necessarily working in the same department but the same university, showed to increase the propensity of colleagues to follow their behaviour. Also this result was highly significant. From the results we can observe that junior lecturers have a high propensity to be affected by entrepreneurial colleagues, especially if they are professors. Senior lecturers propensity also increases with entrepreneurial professors however the effect is smaller. Professors seem not to be affected by entrepreneurial peers as the effect is very small and even a touch negative.

The marginal effects from regression on scientific field not bounded by university affiliation were 0.1729903 with a P-value of 0.094.

5. Discussion/Conclusions

This paper gives a first glance of the role social interaction with entrepreneurial colleagues play for academic entrepreneurship in terms of firm formation. Some interesting results include, 1) The academic entrepreneur is more likely to be an older male, 2) The academic researcher is likely to be influenced by entrepreneurial colleagues of same or higher ranking to become academic entrepreneurs (professors exempted), 3) the results indicate an increase in the propensity of becoming an academic entrepreneur not only depending on spatial but also cognitive proximity.

These results support both H1. The results are also supportive to hypothesis H2. Professors seem not to be affected by entrepreneurial peers as the effect is very small and even a touch negative. The marginal effects from the regression on scientific field, not bounded by university affiliation may give indications that the propensity of becoming an academic entrepreneur is affected not only by colleagues in close spatial proximity but also those in close cognitive proximity. The data construct is however not yet refined enough to provide solid results.

This may give indications that the propensity of becoming an academic entrepreneur is affected not only by colleagues in close spatial proximity but also those in close cognitive proximity. The data construct is however not yet refined enough to provide solid results.

From this we take away interesting clues on how to further refine the empirical approach and explore the data. Next step is to design a panel data enabling the tracking of each individual over several years, tracing the precise moment in time when they acted on the decision to become academic entrepreneurs and analyse that work environment in regards of social influences and proportion of academic entrepreneurs.

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Entrepreneurial Education and Entrepreneurial Intentions: The Role of Entrepreneurial Alertness .

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Entrepreneurial Education and Entrepreneurial Intentions: The Role of Entrepreneurial Alertness.

Abstract

An important aspect needed for promoting entrepreneurship is to encourage individuals by endowing them with the required skills and knowledge for identifying the opportunities and turning these opportunities into successful ventures. Entrepreneurial alertness considered specific human capital skill for identifying opportunity process which can be learned through entrepreneurial education which can have positive effect on entrepreneurial intentions. This suggests cause & effect relationship between entrepreneurship education and intentions through entrepreneurial alertness. Thus, alertness skill acquired through entrepreneurship education for identifying the profitable opportunities mediates the relationship between entrepreneurship education and intentions. Developing upon the insights based on dynamic view of human capital theory, this conceptual paper explores the role of entrepreneurial alertness in a linkage between entrepreneurial education and intentions to become an entrepreneur.

KEYWORDS: Entrepreneurship, Entrepreneurship Education, Alertness, Intentions, Human capital

1. Introduction

Role of entrepreneurship in employment generation and economic development has been acknowledged by scholars, multilateral agencies and policy makers. Therefore promotion of entrepreneurship by providing them the necessary skills and knowledge is being considered vital during university education. According to European Commission, (2006) entrepreneurship education at university level supposed to promote individual intention for becoming entrepreneurs, which will increase the supply of new firms by graduate students.

Generally students confront major hurdles in acquiring the needed resources for identification of entrepreneurial opportunity and exploiting it. To become an entrepreneur students need to accumulate the various entrepreneurial resources related to general (education and knowledge) and specific human capital (entrepreneurial alertness) and resources like financial and social capital, technology and network. (Solesvik, Westhead, Matlay & Parsyak, 2013). Many studies reported the different perspective on entrepreneurship education which concluded that the knowledge and skills acquired during the entrepreneurship education actually promote outcome relating to the intention of the individual to become an entrepreneur (Krueger et al., 2000; Puhakka, 2011; Solesvik, Westhead and Matlay, 2013; Shepherd & DeTienne 2005; Valliere (2011); Zhang, Duyster & Cloudt 2013). The above mentioned studies concluded that entrepreneurship education makes an individual capable with knowledge and skills to identify the opportunities that other have overlooked. Kirzner (1979) described such ability as entrepreneurial alertness. Studies have identified the role of entrepreneurial alertness as a significant feature of entrepreneurial process of identifying the opportunities for starting new venture (Puhakka, 2011).

Solesvik et al. (2013) concluded that alertness related specific human capital can be enhanced through entrepreneurship education. Chang, Liu, and Chiang (2014) study concluded that entrepreneurial alertness mediated the relationship entrepreneurial education and opportunity identification. Moreover, well established entrepreneurial education courses can enhance entrepreneurial alertness. Valliere (2011) described that entrepreneurial alertness is not limited to a few individuals who possess it but it can be developed simply through the application of different set of schemata by learning through entrepreneurship programs. He further argued that disparity in schematic priming might be considered to have connection with

entrepreneurial intention. While Elfving, Brännback and Carsrud (2009) considered that entrepreneurial intentions can only be understood when theoretical framework which includes opportunity identification along with other variables is developed. The Meta analytic review of Bae, Qian, Miao and Fiet (2014) proposed that “evidence-based entrepreneurship can extend our knowledge about the effects of entrepreneurship education on entrepreneurial intentions by investigating mediation effects.”

To analyze these issues discussed above, this paper will propose a conceptual framework for studying entrepreneurial alertness role on relationship between entrepreneurial education and intentions. The organization of this paper is as following. First, we will discuss entrepreneurship education, alertness and intentions and their interrelationship. Then on the theoretical foundation of human capital theory we will look to the entrepreneurial alertness related specific which is developed through entrepreneurship education and its impact on intention to become entrepreneur. Finally we develop a conceptual model which can be used for further empirical studies.

2. Literature Review

2.1 Entrepreneurial Education

The emergence of knowledge based economy has become a major source of economic development and growth since mid-1990s which is foundation for extensive growth in entrepreneurship education. Since then the concept of entrepreneurship education evolved as an important economic development and social phenomenon which is popular as a subject of research as well as academic teaching field (Fayolle & Gailly, 2008).

Studies suggest that HEI's can be considered as an innovation system of the society. When entrepreneurship education is entrenched in to the system, it will not only be producing entrepreneurs, but also promote and reproduce the mechanisms in the society that encourages and facilitate the birth of new ventures (Petridou, Sarri, , & Kyrgidou, 2009). However, it is important for an educational system to provide access and exposure of entrepreneurship to the students at all levels (Volkman, & Tokarski 2009). Thus, the primary goal of entrepreneurship education in HEI's is capacity building of the students for recognizing opportunities and promotes entrepreneurial intentions for creating new venture (European Commission, 2006). This suggest the role of HEI's for providing such a learning experience to the students which in depth and breadth create awareness and promote understanding of entrepreneurship. This exposure and motivation will be a platform for building capability of an entrepreneurial career of the students when they graduate from the university (European Commission, 2008).

Now a day's entrepreneurship education is a dynamic and social process through which an individual alone or in partnership with others, discover opportunities convert these ideas into realities by creating new ventures. Thus, entrepreneurship education is “the process of providing individuals with the concepts and skills to recognize opportunities that others have overlooked and to have the insight and self-esteem to act where others have hesitated” (McIntyre & Roche 1999, p. 33). This could make the HEIs capable of achieving the goal of education which describe that “A graduate should become not only a job-seeker but also, above all, a job-creator” (Schulte, 2004).

2.2 Entrepreneurial Alertness

Academic literature on entrepreneurship suggested that person can identify the opportunity when he is alert and motivated. Isreal Krizner defined entrepreneurial alertness as “the ability

to notice without search opportunities that have hitherto overlooked” which is considered key in understanding the entrepreneurial opportunities. Tang, Kacmar, and Busenitz (2012) considered entrepreneurial alertness as an ability of individual to “accumulate, transform and select” the information that leads in identifying potential profitable business opportunity.

Valliere (2011) argued that entrepreneurial alertness is not an unusual quality which is owned by few individual but it is simply result of advancement and application of schemata which is utilized to make sense of the world. Thus, the intuition component accomplished through schema can characterize the entrepreneurial mind which can help substantially in understanding of how new idea are initiated (Tang, 2008). Gaglio and Katz (2001: p.97) emphasize that, “Kirzner maintains that the crucial difference between opportunity finders (aka entrepreneurs) and non-finders can be found in their relative assessment of the market event or situation”. In other words the basic difference entrepreneur and non-entrepreneur is of alertness related specific human capital through which they accumulate, select and transform information for identifying the profitable business opportunities.

2.2.1 Entrepreneurial education and entrepreneurial alertness

The key role of entrepreneurship education is recognized by the scholar for identifying the entrepreneurial opportunities (Davidson & Honig, 2003; Ucbasaran et al., 2008). Ardichvili et al. (2003) described entrepreneurial alertness is an essential condition considered for the success of opportunity identification triad: recognition, development and evaluation of opportunities with profit potential. Moreover entrepreneurial alertness is used to develop sense by accumulating, transforming and selecting information from the environment so that it can be utilized for opportunity identification (Tang et al., 2012). Valliere (2011) described that entrepreneurial alertness is not limited to a few individuals who possess it but it can be developed simply through the application of different set of schemata by learning through entrepreneurship programs.

According to (Solesvik et al. 2013) students face challenges in accumulating and configuring the required knowledge, specific human capital assets which needed to build up mind set for identifying and exploiting the opportunities. More over Entrepreneurship education help individuals who accumulate and trigger alertness related specific human capital. Alertness related specific human capital consist of various distinctive skills, aptitude, knowledge and experience associated to a particular task, and this capital can be enhanced through learning (Solesvik et al. 2013). During the process of learning, new information usually accommodated in an existing schema by making adjustments (Valliere, 2011). A potential entrepreneurship has to identify opportunities that are not in existence yet, for such process there might not be an applicable schema. Therefore, entrepreneurship education has an exclusive challenge of imparting information to the students which can develop specific human capital of alertness for opportunity-spotting (Valliere, 2011).

Educational psychologist suggested various methods for resolving this paradox based on exposing students to inductive reasoning and analogies (Valliere, 2011). This encourages in attainment of relevant new schemata, and then the activation of these schemata automatically in novel entrepreneurial situations (Cooper & Sweller, 1987). By applying this method, students of entrepreneurship can be exposed to a number of miscellaneous examples of case studies which help them in learning how to identify and spot the opportunities in the environment/market. This will facilitate their learning from which they begin to conceptualize a new schema (Gick & Holyoak, 1983) and develop new schemata which is subject to restructuring and accretion due to new information. Thus, entrepreneurial alertness related

human capital can be learned by comprehensive repetitive exercises and practices for opportunity spotting in a structured way by using various methods in which student learn how opportunities were identified by entrepreneurs who were successful and identify the reasons behind missed opportunities by unsuccessful entrepreneurs. In other words entrepreneurial education enhances entrepreneurial alertness of an individual for identify the opportunity.

DeTienne and Chandler (2004) suggested through entrepreneurship education skill of opportunity identification can be learned at the classroom which is an appropriate place for potential entrepreneurs to develop the required skills and capabilities of opportunity identification. Their study used a variation of a Solomon Four Group Designed experiment based on Securing, Expanding, Exposing and Challenging (SEEC) training through entrepreneurship education. Result of the study suggested that using SEEC approach individual can learn and enhance the ability of opportunity identification. Tang et al. (2012: p.78) concluded that “alertness represents a capability that can be learned and improved, and may offer guidance to aspiring entrepreneurs in how to mindfully discover opportunities with business potential”. Thus, the entrepreneurial alertness ability developed by the students during the entrepreneurship education course/program make them capable to accumulate, select and transform the information necessary for identifying opportunities in the environment. The study finding of Changet al., (2014) properly designed entrepreneurial education program can enhance entrepreneurial alertness . Furthermore, entrepreneurial alertness also mediated the relationship between entrepreneurial education and opportunity identification.

On basis of the discussion above from the literature in entrepreneurship and the role of entrepreneurial education in developing general and specific human capital. It is proposed that individuals who get entrepreneurship education at university level are likely to develop specific human capital of entrepreneurial alertness.

2.3 Entrepreneurial Intentions

Intention is a mental process which predicts the planned behaviour if the behaviour under study is “Rare, involves unpredictable time lags and hard to observe” (Krueger, Reilly, & Carsrud, 2000): p. 411). The understanding of the intention process has proven to be the best predictor of planned behaviour when behaviour is rare or difficult to observe (Krueger, et al., 2000. When such behaviour and activities apply to entrepreneurship will be resulting in an attempt to set off a new venture, despite the current circumstances may cause delay.

The focus of entrepreneurship research before intention model was on psychological characteristics, personality traits and general disposition. They were used to distinguish between successful and unsuccessful entrepreneurs along with demographic factors, like ethnic group, gender, and age. This was criticized because the problem in conceptualizing, methodology and their limited explanatory capacity (Linán & Santos, 2007). From 1990’s social psychological models were used by the researchers involving more proximal variables. The research has focused more on predicting the entrepreneurial intentions rather than realization (Gelderen et al., 2008). According to Armitage and Conner (2001) Meta analyses confirm that the intentions are strong enough to predict the actual behaviour of an individual in a functional setting. The superiority of intention based model has been proved over other models as it is based on individual variables. Therefore, intention are key in the model and formed by the various factors motivation, social environment and belief about personal capabilities (Godsey, 2006). In entrepreneurship literature it is common for studying entrepreneurial intention by applying Theory of Planned Behaviour (TPB).

2.3.2 Entrepreneurial alertness and entrepreneurial intentions

Entrepreneurship education at university level is fundamental in building up human capital to develop entrepreneurial mindsets of the students (European Commission, 2006). Kirzner (1999) suggested that an entrepreneurial mindset consist of alertness which assists in identifying the opportunities. While McMullen and Shepherd (2006) described the process of opportunity recognition and the decision for exploiting the opportunity are two different phases of entrepreneurial process. There are many people who may identify the opportunity, but exploitation of opportunity depends upon the motivation and knowledge of individuals. McMullen and Shepherd (2006) in their study hypothesize that alertness theory developed by Kirzner deals with attention stage during individual decision-making process. If potential entrepreneur believe that the opportunity has profit potential then he or she may assess their own readiness to stand for the uncertainties. On the basis of evaluation uncertainties s/he decide whether or not exploit the opportunity by taking entrepreneurial action. Here the process of decision making does not necessitate the actual initiation or capitalizing of the opportunity but it is his or her intentions to do it. Valliere (2011) argued that disparity in schematic priming might be considered to have connection with entrepreneurial intention. This can be probably developed by means for motivating intention through entrepreneurial alertness however this relation between entrepreneurial alertness and entrepreneurial intention need to be investigated in future research. The study of HOU (2008) concluded that individual with strong entrepreneurial alertness more probable of identifying the opportunity which plays an important role developing individual intentions to become an entrepreneur by starting new venture. Zanger (2003) revealed that individual ability of recognizing opportunities is strongly related to entrepreneurial intention. This study further suggested that skills and techniques for improving the opportunity recognition skill of an individual might be utilized. Because lack of opportunity recognition skills will result in diminution of ability for creating strong entrepreneurial intention even though entrepreneurial self-efficacy is there. In their study Geldern et al.(2008) concluded that an individual entrepreneurial alertness enhance intention and motivate him to set up his own business. Solesvik et al. (2013) suggested that only the students having higher entrepreneurial intention when they had built up high level of entrepreneurial alertness specific human capital.

Thus, on the basis discussion of the literature above it is argued that entrepreneurial alertness of the individual play a vital role in identifying the opportunities which could have impact on individual intentions to become an entrepreneur.

2.3.4 Entrepreneurship education and intentions

The study of European Commission (2006) reported that entrepreneurship specific education encourage students in accumulating entrepreneurial intentions which results in creation and supply of new firms by the students. Curran and Stanworth (1989) in their the opinion pointed that business schools have a propensity to endorse entrepreneurship education on the supposition that enhancing the students entrepreneurship skills and knowledge will increase in the number of nascent entrepreneurs. Galloway and Brown (2002); Henderson and Robertson (2000) in their studies also showed that linkages between entrepreneurial education and entrepreneurial activity of students. While the study of the Potter (2008) highlighted the function of entrepreneurship education is vital in enhancing the entrepreneurship attitudes of individuals at tertiary level of education. Therefore, entrepreneurship education initiatives at university level are considered vital for increasing potential entrepreneurs supply by making more students conscious and interested choosing entrepreneurship as a career option.

Accordingly entrepreneurship education in the form of courses is correlated to entrepreneurial intentions for three reasons. First, entrepreneurship education helps the students to learn and identify new business opportunities. Such knowledge leads to enhance the number and

innovativeness of opportunities which are linked with the technology (Shepherd & DeTienne, 2005). Learning important entrepreneurial skills and competencies will lead to perceive new feasible venture by students, thus affect PBC (Krueger et al., 2000; Zhao et al., 2005). Second, research found positive association between social desirability and entrepreneurship career intention (Tkachev & Kolvereid, 1999). While the important role of education is counted in socializing individuals into entrepreneurial careers (Krueger & Brazeal, 1994) which can form attitude toward behaviour and social norms. Third, through entrepreneurship courses one get knowledge about starting new business venture in a better and faster way the that result in more value from the identical opportunity (Zhao et al., 2005; Davidsson & Honig, 2003).

The study of Liñán and Santos (2007) suggested that practically entrepreneurship education help participants in identification and exploitation of opportunity and enhancing entrepreneurial intention. It is also argued in the studies that learning important entrepreneurial skills and competencies will lead to perceive new feasible venture by students, thus affect Perceived Behavioural Control (PBC) (Krueger et al., 2000; Zhao et al., 2005). Results of different empirical studies have confirmed that PBC, attitude and social norms are the major factors for explaining entrepreneurial intention (Autio et al. 2001; Kolvereid 1996; Krueger and Carsrud, 1993; Liñán and Chen 2009; Liñán et al. 2011). In their study Zhang et al. (2013) not only empirically demonstrated the impact of entrepreneurship education on entrepreneurship intention but also showed that entrepreneurship education directly effect on entrepreneurship intentions. This study also suggested for further study on the relationship between entrepreneurship education and intentions especially from developing countries context because there is little research from that perspective.

In their study Oosterbeek et al. (2010) concluded that the negative impact of entrepreneurship education on entrepreneurship intentions. In this study they also reported entrepreneurship education impact on entrepreneurial skills/ traits was significantly zero or negative. They argued that such results may be linked to the fact that during entrepreneurship education students have acquired “realistic perspectives” about themselves and what is required to be an entrepreneur. While study of Graevenitz, Harhoff, and Weber (2010) found the effect of entrepreneurship education on entrepreneurial intentions decreased to certain extent, even though the entrepreneurship course have significantly positive impact on students’ entrepreneurial skills. Lorz, Müller, and Volery (2011) in the Meta analysis of impact studies and applied methodologies of entrepreneurship education suggested mainly three reasons for such confusing results on the impact of entrepreneurship education on intentions: first in method used, for example small sample and cross section design, lack of ex-ante/ex-post and control group; second variety of different entrepreneurship programs as independent variable and third variation in participant levels.

Nevertheless; still there is limited agreement on the variables which are the basis of individual decision of starting a new venture. Because majority studies on entrepreneurial education and intentions focused on general impact of entrepreneurial education on intention and measured the entrepreneurship intention before or after entrepreneurship course or program (Lo, 2011). This may be because as (Neck, Greene, Branson, & Ash, 2011 p:66) said “Our purpose was to acknowledge that we teach in several different worlds. Many teach in more than one world, but the environment for entrepreneurship is changing whereas education for entrepreneurship is not”.

3. Theoretical underpinning

The theory of human capital developed to assess the impact of human capital investment on income distribution of employees (Becker, 1964). Becker (1964) suggested that skills and knowledge acquired by individual are theoretically outcome of the investment in human capital

such as education and work experience. As a result majority of research studies have used education and work experience to assess the construct of human capital and used it as substitute of an entrepreneurs' human capital (Reuber & Fischer, 1994).

Entrepreneurship research presents various arguments in support of human capital impact on entrepreneurial success. First, the entrepreneurial aptitude of individual/owner for identifying and exploiting opportunities with profit potential can be enhanced by human capital (Shane & Venkatraman, 2000). The prior knowledge which is acquired through education and experience can enhance the individual entrepreneurial alertness (Westhead, Ucbasaran, & Wright, 2005). This prepare individual to discover specific opportunities that are overlooked by others (Krizner, 1979). The other effect of human capital is on individuals' approach towards the exploitation of business opportunities (Shane, 2000). It is also considered as a precondition to learn more which support in the accumulation of new skills and knowledge (Ackerman & Humphreys, 1990). Third studies have identified a positive relationship between human capital and venture planning strategy which has positive impact on venture success (Frese et al., 2007).

Accordingly the inputs of individual related to his/her general human capital and specific human capital are supposed to be associated with output of entrepreneurial activities for identifying the business opportunities and intentions to pursue them to become an entrepreneur (Ucbasaran et al., 2008). Solesvik et al (2013) concluded that entrepreneurship education enhance the entrepreneurial alertness related specific human capital for identifying the opportunities in the environment which increase entrepreneurial intention for exploiting the opportunities and starting the new venture.

4. Conceptual Framework

Conceptual frame work for this study has been laid on the foundation of human capital theory. Studies have also showed the development of general and specific human capital by investing in entrepreneurship education has direct impact on intention to start-up, outcome and success of new venture (Martin et al., 2013). This provided support for building a conceptual model. The explanation for this is as following.

According to Shane (2003) the process of entrepreneurship consists of capabilities to discover the opportunity, collect resource, organize them and adopt strategy so that opportunity can be exploited. A better educated person has more chances to identify and exploit the opportunity because of the knowledge, skills and information he obtained through education. Morris et al. (2013) has identified such entrepreneurship skills and competencies for example opportunity identification and evaluation, risk management, self-efficacy and creative problem solving. They further suggest that if such competencies are taught and learned in entrepreneurship education courses and program may result in transformation of students in to successful entrepreneurs. Research studies have found that the higher venture creation or entrepreneurship intention among the students who have been part of entrepreneurship courses but unable to identify cause and effect of course participation (Menzies & Paradi, 2003; Noel, 2001). Entrepreneurship education helps the students in learning and identifying new business opportunities. Therefore, such knowledge and skills leads to enhance the number and innovativeness of opportunities which are linked with the understanding of market and technology (Shepherd & DeTienne, 2005).

According to McMullen and Shepherd (2006) entrepreneurship education not only improves knowledge, skills and information which needed to pursue an opportunity but also equip individual with analytical ability and knowledge of entrepreneurial process which improve the entrepreneurial judgment. They further argued that process of opportunity recognition and the

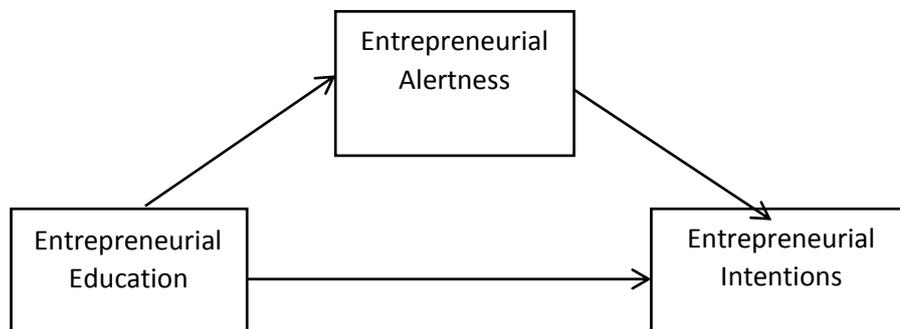
decision for exploiting the opportunity are two different phases of entrepreneurial process. Moreover there are many people who may identify the opportunity, but exploitation of opportunity depends upon the motivation and knowledge of individuals. (Krueger et al. 2000) in their study argued that the decision of becoming an entrepreneur may be considered as voluntary and conscious decision of an individual therefore it is reasonable to analyze that how the decision is taken by the individual. McMullen and Shepherd (2006) proposed that alertness theory developed by Kirzner deals with the attention stage during individual decision-making process. They concluded that if potential entrepreneur believe that the opportunity has profit potential based on his knowledge, then he or she may assess his/her own readiness to stand for the uncertainties to decide whether or not exploit the opportunity by taking entrepreneurial action. Valliere (2011) identified that potential entrepreneurs has the idiosyncratic challenge for identification and exploitation of opportunity to because they may not have relevant schema. Thus, the disparity in schematic priming might be considered to have connection with entrepreneurial intention (Valliere, 2011) which can be probably developed through entrepreneurial alertness.

Venkataraman (1997) suggested that the conversion of education and experience in to knowledge is a vital element of the individual-opportunity nexus. It supports the individual's cognitive structure for opportunity recognition that leads to individual intentions of becoming an entrepreneur by exploiting the opportunity. Herbert and Link(1988) in their study argued that an educated individual with skills and information for opportunity identification and exploitation face less uncertainty and have high expectation about return on opportunity exploitation which is vital for motivating individual intention to start new venture. Chang et al. (2014) concluded that entrepreneurial alertness act as mediator between entrepreneurial education and opportunity identification process. Thus, entrepreneurial education in particular increases the likelihood of the student to identify and exploit the opportunity which develops entrepreneurial mind set for creating new venture. Geldern et al. (2006) in their study found consistent support for entrepreneurial alertness in developing intentions which point out that an individual entrepreneurial alertness enhance intention and motivate him to set up his own business. HOU (2008) concluded that individuals with strong entrepreneurial alertness are more probable of identifying the opportunity which plays an important role in developing entrepreneurship intentions. Accordingly Krueger (2000) the emergence of opportunity is based on the intentions which are result of people's belief and way of thinking. Generally belief and desires configure the individual intentions and actions (Ajzen, 1991; Greve, 2001). Learning important entrepreneurial skills & competencies will lead to perceive new feasible venture by students, thus affect PBC (Krueger et al., 2000; Zhao et al., 2005).

Meta-analysis conducted by Martin et al. (2013) concluded that entrepreneurship education and training specifically in academic context develop specific and general human capital which has impact on positive perception of entrepreneurship and entrepreneurial intentions . While the study of Solesvik et al. (2013) concluded that specific human capital of entrepreneurial alertness learned through entrepreneurship specific education has significant impact on students intentions to become entrepreneur. The argument presented above help us in understanding the role of entrepreneurship education in developing specific human capital entrepreneurial alertness which motivate individual for starting new venture.

On the basis discussion above in the literature it is argued that entrepreneurial alertness mediates the relation between entrepreneurship education and entrepreneurial intentions. As a mediator entrepreneurial alertness signifies a generative mechanism of independent variable entrepreneurship education through which a focal is able to influence a dependent variable of

interest- i.e. entrepreneurial intentions (Baron & Kenny, 1986). Because the relationship between entrepreneurship education and entrepreneurial intentions can happen through entrepreneurial alertness this give explanation of ‘why’ and ‘‘how’’ a cause-and-effect happens (Baron & Kenny 1986; Frazier et al. 2004). In other words entrepreneurship education is presumed to cause entrepreneurial alertness and in turn entrepreneurial alertness as mediator cause the entrepreneurial intentions.



5. Conclusion

This conceptual study proposed the cause and effect relationship between entrepreneurial education and intentions through entrepreneurial alertness which can enhance our understanding. Moreover, a well-designed entrepreneurship education course could improve specific human capital of alertness which can strengthen the entrepreneurial intention. Further empirical studies are warranted for empirical support of this study for identifying the cause and effect relationship between entrepreneurial education and intention.

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Academic Entrepreneurship: A Multilevel Examination of Individual, Subunit and Organization Effects

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Academic Entrepreneurship: A Multilevel Examination Of Individual, Subunit And Organization Effects

ABSTRACT

This study utilizes a multilevel approach to both estimate the relative importance of individual, subunit, and organization effects on entrepreneurial intentions in academia, as well as to investigate specific factors within the subunit effect and their interactions with other levels. Using a dataset of 2,652 researchers from 386 departments in 24 European universities, our findings reveal that intra-university differences, caused by the influence of the department, should not be ignored when studying academic entrepreneurship. Whereas researchers' entrepreneurial intentions are mostly influenced by individual differences, department membership explains more variation than the university as a whole. Furthermore, drawing upon organizational culture literature, we identify a department's adhocracy culture, characterized by flexibility and an external orientation, to be positively related to entrepreneurial intentions. Finally, consistent with trait activation theory, we find that strong adhocracy cultures reinforce the positive association between proactive personality and entrepreneurial intentions. This effect is further intensified when the university also has a technology transfer office with a substantial size. Our results have relevant implications for both academics and practitioners, including university managers, department heads and policy makers.

INTRODUCTION

Entrepreneurship research is dominated by single-level studies, mainly focusing on the individual or the firm as unit of analysis (Davidsson & Wiklund, 2001). Recently, however, a growing recognition has emerged that a multilevel approach, incorporating individual, organizational and environmental elements, yields a more complete understanding of entrepreneurial phenomena (Hitt et al., 2007; Welter, 2011). Whereas numerous opportunities still exist for multilevel research to make a significant contribution to the field of entrepreneurship, so far, studies building bridges across different levels remain scarce.

The need to go beyond a single level of analysis is particularly relevant in the academic entrepreneurship literature. Following the growing role of universities as a hub of innovation, commercialization and new firm creation, alongside traditional tasks of research and teaching (Ambos et al., 2008), scholars have devoted substantial attention to explaining academic entrepreneurship. However, while distinct levels of analysis have been considered in the academic entrepreneurship literature, these have generally been studied in relative isolation (Lockett et al., 2005; Rothaermel et al., 2007). In particular, an extensive body of literature at the *micro-level* has scrutinized the characteristics of individual academic entrepreneurs, founding teams and spin-off firms. *Meso-level* studies have focused on the university and the technology transfer office (TTO), in order to identify the policies, mechanisms and incentives that foster academic entrepreneurship. Finally, some research at the *macro-level* has explored the influence of governmental regulations or initiatives, and industry or market conditions (Djokovic & Souitaris, 2008). Consequently, to date, insights are lacking on how the heterogeneous nature of context (i.e. meso and macro-level) affects the emergence and performance of (potential) academic entrepreneurs (i.e. micro-level). Given that organizational contexts can shape the development of individual cognitions, attitudes and behaviors (Mowday & Sutton, 1993), referred to as "top-down" processes in multilevel theory (Kozlowski & Klein, 2000), our study aims at bridging the gap between the micro- and meso-level. Specifically, we acknowledge that researchers' intentions to engage in academic entrepreneurship may emerge due to variation at the meso-level, next to, and through interaction with, individual-related antecedents.

In addition, current meso-level studies have predominantly examined the role of the university. While university characteristics, such as support structures and infrastructure (e.g., Phan et al., 2005), research intensity (e.g., Hewitt-Dundas, 2012), and the nature of the TTO (e.g., Bercovitz et al., 2001), are important drivers of academic entrepreneurship, departments within the same university may demonstrate great heterogeneity in terms of entrepreneurial activity (Grimaldi et al., 2011). So far, however, empirical studies have largely ignored the department level, which is quite surprising. Indeed, some research has indicated the importance of the “localized social environment”, with special attention allocated to workplace peers (Kenney & Goe, 2004; Louis et al., 1989; Stuart & Ding, 2006) and the department chair (Bercovitz & Feldman, 2008). Furthermore, Rasmussen et al. (2014) revealed significant differences in early spin-off performance due to variation in initial departmental support. Nevertheless, while of considerable theoretical and practical interest, empirical evidence on the department level is scant. Since researchers are typically embedded in departments, which are in turn embedded in universities, one of the fundamental questions left unanswered is the importance of the relatively neglected department level to variance in academic entrepreneurship, compared with the well-studied individual and university level.

Accordingly, the first research objective of this paper is to advance our understanding *whether the department actually matters*, through evaluating the extent to which department membership explains differences in academic entrepreneurship. Specifically, we study academic entrepreneurial intentions, which have recently received increased attention in the literature (e.g., Obschonka et al., 2012). Using data on 2,652 researchers nested in 386 departments at 24 European universities, we utilize hierarchical linear modeling (HLM) to simultaneously assess the variance accounted for by the individual, subunit and organization level. Subsequently, as second research objective, our paper disentangles the direct effect of *specific factors at the department level* on entrepreneurial intentions, as well as cross-level interactions between the micro-level (researcher) and the meso-level (university and department). Specifically, building on organizational culture literature and trait activation theory (Tett & Burnett, 2003), we develop and test hypotheses about the role of department culture.

This work contributes to the (academic) entrepreneurship literature in several ways. First, responding to general calls for multilevel research in entrepreneurship (Shepherd, 2011; Zahra & Wright, 2011), our study provides more fine-grained insights into relationships that traverse different levels of analysis. In particular, we address the need to contextualize entrepreneurship in academia, put forward as pertinent future research avenue by Djokovic & Souitaris (2008), Lockett et al. (2005), Markman et al. (2008), and Rothaermel et al. (2007). The present study further adds to the extant academic entrepreneurship literature that generally has concentrated on either the micro- or meso-level of analysis, but has lacked sufficiently complex models or richness in data for blending the two. Second, by examining the extent to which the department is influential, we contribute to the emerging debate in the academic entrepreneurship literature on whether a shift in focus is needed from the university level to the relatively neglected department level (Rasmussen et al., 2014). Additionally, we enrich the entrepreneurship literature by introducing and highlighting the importance of organizational subcultures to the (academic) entrepreneurial process, thereby integrating insights from person-situation interaction theory. Finally, we extend the recent stream of studies on entrepreneurial intentions in academia by investigating the interplay between individual and contextual determinants in the configuration of such intentions.

THEORY AND HYPOTHESES

Research objective 1: Department level effects on entrepreneurial intentions

Organizations are generally characterized by differentiation (horizontal) and integration (vertical), resulting in multiple levels of conceptual interest (Kozlowski & Klein, 2000). Lower-level entities are nested hierarchically in upper-level entities, such as individuals in subunits, and subunits in organizations (Hitt et al., 2007). Organizational behavior researchers have demonstrated the pivotal role of the subunit level for a broad range of individual outcomes including innovation (Miron et al., 2004), creativity (Hirst et al., 2009), performance (Bommer et al., 2007), job satisfaction (Seibert et al., 2004), and turnover (Liu et al., 2012).

Similarly, in a university context, researchers are typically embedded in research groups or departments, which are in turn clustered in faculties and universities (Markman et al., 2009). Consequently, we can expect the subunit level to affect entrepreneurial activities or researchers' propensity to engage in such endeavors. In fact, though prior research has largely documented the impact of university characteristics on academic entrepreneurship, the literature has also alluded to the importance of the subunit level (Bercovitz & Feldman, 2008; Kenney & Goe, 2004; Louis et al., 1989; Stuart & Ding, 2006), but has provided limited evidence on the existence of a department level effect. Therefore, following assertions in the academic entrepreneurship literature, just as indications provided in the organizational behavior literature, we argue that subunit effects are at play in academic entrepreneurship and can be detected by employing a multilevel model. Specifically, we propose:

Hypothesis 1: The department level explains significant variance in entrepreneurial intentions (in addition to individual and university effects).

Research objective 2: Cross-level direct and moderation effects of department culture

Assuming that the department level plays a vital role in academic entrepreneurship, we subsequently aim at understanding which departmental characteristics may affect researchers' entrepreneurial intentions. In doing so, we focus on the cross-level direct and moderation effects of department culture.

Direct effect of department culture on entrepreneurial intentions

Organizational culture can be defined as a set of values and beliefs shared by members of the same organization, which influence their thoughts, feelings and behaviors (O'Reilly et al., 1991; Schein, 1985). Organizational culture provides a framework through which individuals internalize expectations about their roles and behaviors in the organization (Deshpandé & Webster, 1989). Prior research has explored the overall effects of organizational culture on diverse individual outcomes, including entrepreneurial behavior (e.g., Hornsby et al., 2002; Ireland et al., 2009). At the same time, scholars have widely observed the existence of distinct subcultures within an organization (Schneider et al., 2013; Trice & Beyer, 1993). Subcultures may develop within different departments, functional areas or work groups (Hofstede, 1998). As such, in addition to the influence of the overall organizational culture, organizational members are also affected by the value systems of the organizational subunits in which they are embedded (Adkins & Caldwell, 2004). Subsequently, in a university context, certain departments may have cultural values that trigger academic entrepreneurship, while others may have a culture that inhibits researchers' entrepreneurial intentions.

A widely accepted and theoretically driven conceptualization, that covers the key dimensions of organizational culture as identified by Detert et al.'s (2000) literature review, is Quinn & Rohrbaugh's (1983) competing values framework. The framework calls attention to how opposing values exist in organizations or subunits, and how "different mixtures of values are reflected in both their desired ends as well as in their means to attain them, such as their structural designs and mechanisms of coordination and control" (Zammuto & O'Connor, 1992:

711). Four culture types – clan, hierarchy, market, and adhocracy - are differentiated according to whether organizations or subunits value flexibility and discretion versus stability and control, and whether they adopt an internal versus external orientation (Cameron & Quinn, 1999). As pointed out by Buenger et al. (1996), competing value sets differ from one subunit to another.

Of particular relevance in the context of our study is the adhocracy culture type (flexibility and external orientation), given its emphasis on innovation, creativity and risk-taking. A strong adhocracy culture occurs in dynamic organizations or subunits that can adapt rapidly when new circumstances arise (Cameron & Quinn, 1999). Accordingly, we expect university departments with adhocracy cultures to provide a setting where entrepreneurial intentions are more likely to arise among researchers. This is because the entrepreneurial process is fraught with difficulties, unforeseeable hazards and high levels of uncertainty (Nelson & Winter, 1982). Groen & Walsh (2013) indicate that in order to successfully commercialize technologies, entrepreneurs need to engage in activities which are difficult to manage, such as alliance management and open innovation, and have to creatively develop new business models. Subsequently, given the innovative and risk-oriented spirit which is likely to prevail in adhocracy-type departments, we expect entrepreneurial intentions to reside within such departments. Hence, we assume:

Hypothesis 2: A department's adhocracy culture is positively related to entrepreneurial intentions.

Moderation effects of department culture on entrepreneurial intentions

As we have contended so far, using a multilevel perspective, we expect department culture to affect academic entrepreneurship, over and above factors at other levels. Beyond the direct relation of department culture to entrepreneurial intentions, we draw upon trait activation theory (TAT) to conceptualize the moderation effects of department culture, as such building bridges between the individual and subunit level. TAT focuses on a person-situation interaction model to explain individual behavior as a response to relevant cues found in situations (Tett & Guterman, 2000). The underlying principle is that individuals are more likely to behave in a way consistent with their personality trait when the contextual influence at play is relevant to the trait (Hirst et al., 2009; Tett & Burnett, 2003). Applying TAT to our research objective, aimed at understanding the meaning of department culture for academic entrepreneurship, we can expect individuals possessing personality traits leaning towards entrepreneurship to especially behave consistently with these traits when their context fosters entrepreneurial behavior.

Following this logic, an important trait in our study is proactive personality, which refers to the enduring behavioral tendency of people to take action to influence their environment (Bateman & Crant, 1993). Individuals high in proactive personality “identify opportunities and act on them, show initiative, and persevere until meaningful changes occur” (Crant, 2000: 439). Proactive personality has been associated with positive outcomes across many domains, such as job performance (Thompson, 2005), career success (Seibert et al., 1999), and entrepreneurship (Crant, 1996). Furthermore, prior studies have shown how organizations can provide cues that activate an individual's proactive personality, and related behavior (e.g., Erdogan & Bauer, 2005; Li et al., 2010).

As argued above, we identify adhocracy cultures as cultures which are, thanks to their flexibility and external orientation, supporting entrepreneurial activities. In such contexts, individuals possessing traits oriented towards entrepreneurship are more likely to (intend to) engage in entrepreneurial activities. Accordingly, we assume that the positive relationship between proactive personality and entrepreneurial intentions, as found by Crant (1996), also holds in a university context. However, consistent with the moderation implied by TAT, we argue that a departmental adhocracy culture may provide cues that bring out proactive

personality and entrepreneurial intentions. Indeed, given that adhocracy cultures exemplify proactive strategies (Zammuto & O'Connor, 1992), according to TAT, the interaction between person and situation will stimulate proactive personality and behavior. Therefore, we contend that entrepreneurial intentions resulting from researchers' proactive personalities are more likely to occur in university departments with a strong adhocracy culture. Thus, we hypothesize:

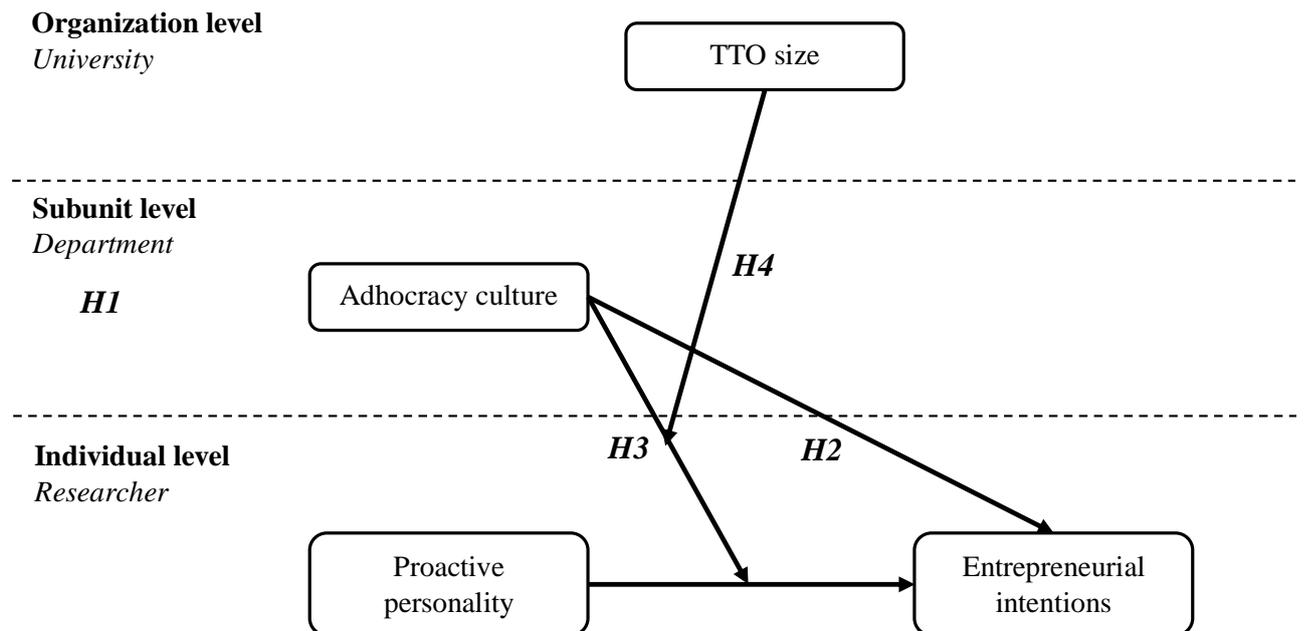
Hypothesis 3: A department's adhocracy culture moderates the positive relationship between proactive personality and entrepreneurial intentions, such that the effect is reinforced when a strong adhocracy culture is in place.

Alongside their embeddedness in subunits, individuals are part of the overall organization. Hence, contextual cues that trigger researchers' entrepreneurial traits can originate from the department level, as hypothesized above, but also from the university as a whole. We expect that, in addition to the activation of proactive personality through a department's adhocracy culture, resulting in higher levels of entrepreneurial intentions, university characteristics could further enhance this effect. Therefore, in what follows, we bring together the individual, subunit and organization level. Concretely, in line with TAT, we argue that the positive relation between proactive personality and entrepreneurial intentions will be reinforced if both the subunit and organizational context display an external orientation and thus stimulate entrepreneurship. This is because proactive individuals characteristically scan their environment for opportunities (Bateman & Crant, 1993), and such outward focus translates into greater entrepreneurial intentions (Crant, 1996). At the department level, adhocracy cultures are inherently characterized by an external orientation, in which prospecting for opportunities is valued (Cameron & Quinn, 1999). As for the university level, in response to the increasing emphasis on entrepreneurial activities, most universities have established dedicated TTOs (Markman et al., 2008). TTOs fulfill a boundary spanning role between academia and industry, or the university and its external environment (Ambos et al., 2008). In their boundary spanning activities, TTOs serve as a bridge between internal "suppliers" of research results (i.e. researchers or groups) and external "customers" (i.e. firms, entrepreneurs and venture capitalists) (Siegel et al., 2003). As such, the extent to which the university has an external orientation is manifested in the size of its TTO. Taken together, we argue that proactive researchers will possess even higher levels of entrepreneurial intentions if they are working in departments with a strong adhocracy culture which are part of universities with a large TTO. So:

Hypothesis 4: A university's TTO size and a department's adhocracy culture moderate the positive relationship between proactive personality and entrepreneurial intentions, such that the effect is reinforced when both a large TTO and strong department adhocracy culture are in place.

Figure 1 depicts the conceptual model for this study.

Figure 1: Conceptual model



We also included control variables at the individual (gender, entrepreneurial experience), subunit (entrepreneurial role models) and organization (university size, professor's privilege) levels.

METHODOLOGY

Data collection and sample

Our study is based upon cross-sectional data collected in 2012-2013 at 24 universities in five European countries. As starting point for our data collection, we used the cultural clusters put forward by the Global Leadership and Organizational Behavior Effectiveness research program (GLOBE) (Javidan et al., 2006) and selected the following countries: Sweden (Nordic Europe), Spain (Latin Europe), Slovenia (Eastern Europe), Germany and Belgium (Germanic Europe). For each country, we compiled a list of all universities by means of secondary sources (including reports by ministries of education, university rankings, technology transfer networks and general internet searches). Next, we selected two geographical regions within each country and contacted all universities through emailing or phoning their TTOs, asking for their participation in our research. Eventually, we received positive answers from 40 out of 58 TTOs contacted. Subsequently, we arranged face-to-face interviews with TTOs, in which stage another nine TTOs were not available or eventually not willing to participate, resulting in 31 TTOs offering full collaboration. Through these interviews, we obtained information on university and TTO characteristics. Primary data were verified and complemented with secondary data from annual reports, university and TTO websites. Furthermore, we asked permission and assistance to contact individual researchers from different scientific disciplines, which was not feasible in seven universities due to privacy rules or non-existence of staff directories.

The survey population consisted of 32,358 researchers. Respondents received a request through email to complete an online questionnaire, followed by a kind reminder after one week. We obtained 6,442 failure messages indicating that email addresses were invalid or our message could not be sent, resulting in a usable population of 25,916 researchers. In total, 4,515 responses were received (or 17% of the usable population, which is comparable to previous research in this domain (Obschonka et al., 2012)). After elimination of incomplete responses and departments with less than two respondents or insufficient within-department agreement

(i.e. $r_{wg(j)} < 0.70$; Bliese, 2000), our final sample consists of 2,652 researchers nested in 386 departments who fully completed the questionnaire, or 10% of the usable population. T-tests revealed no significant differences between respondents who filled in all questions and those who provided incomplete responses, or between early and late respondents, in terms of gender, age, human capital, discipline or country ($p > 0.05$).

Measures

Entrepreneurial intentions were assessed using the 6-item scale developed by Linan & Chen (2009) (1 = strongly disagree; 7 = strongly agree). Cronbach's alpha is 0.96, indicating high scale reliability (Hair et al., 2006). *Proactive personality* was measured using a shortened version of the Bateman & Crant (1993) scale, as validated by Seibert et al. (1999) (Cronbach's alpha 0.88). *Adhocracy culture* was captured with Cameron & Quinn's (1999) scale. To justify aggregation from the individual to the subunit level, first it was necessary to ascertain that there is little variance *within* departments in respondents' perceptions of adhocracy culture. A second prerequisite for aggregation was that there is variance *across* departments in perceptions of adhocracy culture. Both the mean value of inter-rater agreement ($r_{wg(j)} = 0.78$) and intra-class correlations ($ICC(1) = 0.13$; $ICC(2) = 0.77$) supported aggregating individual responses to the department level through calculation of the mean score (Bliese, 2000). *TTO size* is measured by the total number of FTE staff working at the university's TTO (including IP and licensing staff, excluding staff employed in science parks or incubator facilities), based upon interview data.

As our study aims at developing a multilevel model that incorporates the individual, subunit and organization level, we also deemed it necessary to include control variables at these different levels. At the level of the researcher, *gender* (0 = male, 1 = female) was controlled for as men are usually more entrepreneurial than women (Crant, 1996). *Entrepreneurial experience* indicates whether or not respondents have ever started or attempted to start their own business, including any self-employment (0 = no, 1 = yes). Prior entrepreneurial exposure has been found to relate positively to entrepreneurial intentions (Obschonka et al., 2012; Zhao et al., 2005). At the department level, *entrepreneurial role models* indicate whether the department has members who founded their own business (0 = no, 1 = yes). Researchers' entrepreneurial decisions are shown to be socially influenced (Bercovitz & Feldman, 2008), as the presence of entrepreneurial role models diminishes concerns about the social ramifications of own entrepreneurial actions (Stuart & Ding, 2006). At the university level, the natural logarithm of the number of academic staff is used as indicator of *university size*. Finally, the presence of *professor's privilege* in Swedish universities, which gives full ownership of intellectual property rights to researchers, was controlled for through inclusion of a dummy variable (0 = no, 1 = yes).

RESULTS

Analytical strategy

Table 1 presents the means, standard deviations, and correlations among the variables under study. The dependent variable of this study, entrepreneurial intentions, was operationalized at the individual level of analysis, while the independent variables were measured at the individual (researcher), subunit (department), and organization (university) level. We used three-level HLM (Raudenbush & Bryk, 2002) to test our hypotheses. In contrast to OLS regression analysis, HLM explicitly accounts for the nested data structure and allows to simultaneously estimate the impacts of factors at different levels on individual-level outcomes, while maintaining appropriate levels of analysis for these predictors (Hofmann et al., 2000).

Table 1: Descriptive statistics and correlations

	Mean	SD	(1)	(2)	(3)	(4)
<i>Level 1 – Individual (n = 2,652)</i>						
(1) Gender ^a	0.49	0.50				
(2) Entrepreneurial experience ^a	0.17	0.38	-0.12			
(3) Proactive personality	4.83	0.90	-0.09	0.16		
(4) Entrepreneurial intentions	2.47	1.51	-0.19	0.37	0.37	
<i>Level 2 – Subunit (n = 386)</i>						
(1) Entrepreneurial role models ^a	0.79	0.41				
(2) Adhocracy culture	3.88	0.69	0.14			
<i>Level 3 – Organization (n = 24)</i>						
(1) University size	3.30	0.37				
(2) Professor's privilege ^a	0.33	0.48	-0.33			
(3) TTO size	15.00	18.11	0.36	0.11		

Pearson correlation coefficients (1-tailed), indicating significant correlations ($p < 0.05$) **in bold**

^a Correlations of binary variables should be interpreted with care.

Table 2: Hierarchical linear modeling (HLM) estimations of variance (*Hypothesis 1*)

Entrepreneurial intentions	Variance component	Percentage of total variance	d.f.	χ^2
<i>Unconditional model</i>				
Level 1 variance (between individuals)	2.12126	92.63%		
	0.11552	5.04%	362	503.78***
Level 2 variance (between subunits)	0.05327	2.33%	23	60.98***
Level 3 variance (between organizations)				

*** $p < 0.001$

n = 2,652 individuals (level 1), 386 subunits (level 2), and 24 organizations (level 3)

Research objective 1: Department level effects on entrepreneurial intentions

A fully unconditional model, a null model with no predictors, is used to examine the proportion of variance in entrepreneurial intentions attributable to each level of analysis, with particular interest in the subunit or department level. As illustrated in Table 2, the unconditional modeling partitions the total variance into three components: between individuals, between subunits, and between organizations. The analyses reveal that only 2.33 per cent of the variance in entrepreneurial intentions resides between universities, 5.04 per cent lies between departments within universities, and the largest percentage of variance, 92.63 per cent occurs at the individual level. However, the chi-squared test confirms that significant variance occurs across both departments and universities ($p < 0.001$). Since our data demonstrate sufficient between-department variance in entrepreneurial intentions, this provides *support for Hypothesis 1*.

Research objective 2: Cross-level direct and moderation effects of department culture

Now that we have empirical support that the department level plays a part in the academic entrepreneurial process, a necessary condition is fulfilled for our second research objective or assessing the role of specific departmental factors, such as culture, in researchers' entrepreneurial intentions. Consequently, we tested the cross-level direct effect (Model 1) and

moderation effects (Models 2 and 3) of a department's adhocracy culture, presented in Table 3.

As for the control variables included in our study, our findings are mostly consistent with prior research. In particular, at the individual level, we find that women possess lower entrepreneurial intentions than men ($p < 0.001$) (Crant, 1996; Zhao et al., 2005), and that entrepreneurial experience (Obschonka et al., 2012) and proactive personality (Crant, 1996) relate positively to entrepreneurial intentions ($p < 0.001$) Our data do not demonstrate a significant influence of entrepreneurial role models present within departments. At the university level, we find universities with the professor's privilege to be less conducive to researchers' entrepreneurial intentions ($p < 0.05$). Finally, we do not observe a direct effect of university nor TTO size.

Table 3: HLM unstandardized coefficients (robust standard errors in parentheses)
(Hypotheses 2 – 4)

Entrepreneurial intentions	Model 1		Model 2		Model 3	
<i>Level 1</i>						
Intercept	2.525****	(0.126)	2.525****	(0.126)	2.525****	(0.122)
Gender	-	(0.051)	-	)	-0.328****	(0.051)
Entrepreneurial experience	0.331****	(0.065)	0.333****	(0.051)	1.267****	(0.064)
Proactive personality	1.266****	(0.030)	1.267****	)	0.477****	(0.030)
<i>Level 2</i>						
Entrepreneurial role models		(0.115)		)	-0.045	(0.111)
Adhocracy culture	-0.037	(0.068)	-0.037	(0.027)	0.124**	(0.059)
<i>Level 3</i>						
University size		(0.183)		)	-0.224	(0.190)
Professor's privilege	-0.232	(0.096)	-0.232	(0.115)	-0.220**	(0.097)
TTO size	-0.227**	(0.002)	-0.227**	)	-0.001	(0.002)
<i>Level 1 x 2</i>						
Proactive personality x Adhocracy culture	-0.001		-0.001	(0.068)	0.074	(0.070)
<i>Level 1 x 3</i>						
Proactive personality x TTO size				(0.182)	0.001	(0.001)
<i>Level 2 x 3</i>						
Adhocracy culture x TTO size				(0.096)	0.006****	(0.002)
<i>Level 1 x 2 x 3</i>						
Proactive personality x Adhocracy culture x TTO size				(0.002)	0.003*	(0.002)
)		
				(0.062)		
)		
R ² between-individuals	0.24		0.24		0.24	
R ² between-subunits	0.18		0.17		0.25	
R ² between-organizations	0.47		0.47		0.43	
R ² total	0.24		0.24		0.24	

* $p < 0.10$; ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

n = 2,652 individuals (level 1), 386 subunits (level 2), and 24 organizations (level 3)

° $R^2_{total} = R^2_{between-individuals} \times 92.63\% + R^2_{between-subunits} \times 5.04\% + R^2_{between-organizations} \times 2.33\%$

Turning to our hypotheses, Model 1 shows a positive direct relationship of departmental adhocracy culture on researchers' intentions to engage in entrepreneurial activities (0.164; $p < 0.05$), as predicted by Hypothesis 2. A precondition for testing cross-level interactions is that

the slope coefficient of the relationship between proactive personality and entrepreneurial intentions varies across individuals. Results confirmed significant variance in the level 1 slope (variance = 0.04; $\chi(377) = 424.32$, $p < 0.05$). Subsequently, we include adhocracy culture as a moderator in Model 2. The positive and significant coefficient (0.108; $p < 0.10$) corroborates Hypothesis 3 that individuals' proactive personality leads to even greater entrepreneurial intentions when their department has a strong adhocracy culture. The graphical representation of the interaction pattern for the moderator at one standard deviation below and above the mean is presented in Figure 2.

Finally, we introduce the three-way-interaction in Model 3 and find support for Hypothesis 4, which proposed that adhocracy culture and TTO size are simultaneously reinforcing the positive link between proactive personality and entrepreneurial intentions (0.003; $p < 0.10$). Figure 3 visualizes this moderation effect.

Figure 2: Cross-level moderation effects of adhocracy culture on the relationship between proactive personality and entrepreneurial intentions (Hypothesis 3)

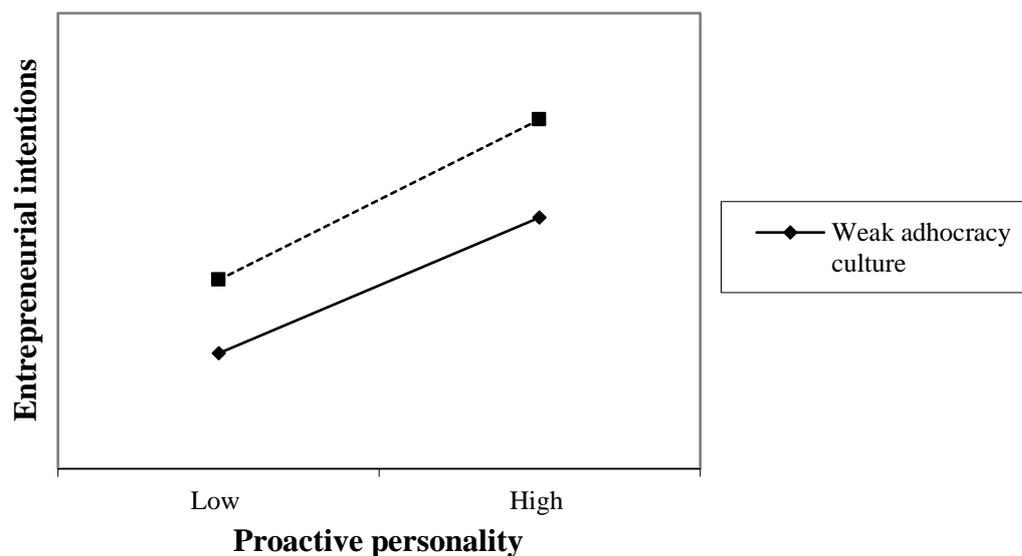
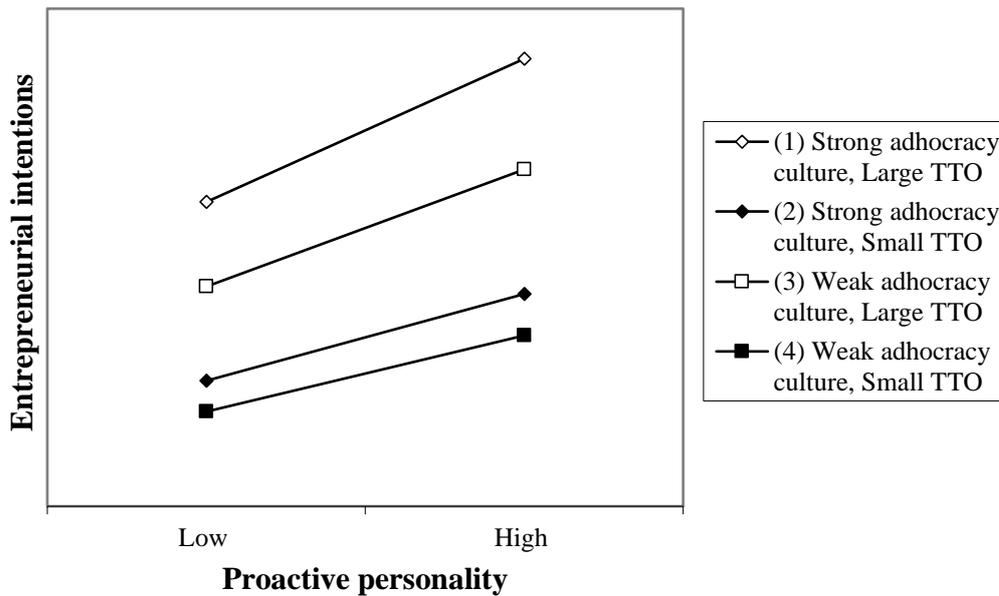


Figure 3: Cross-level moderation effects of TTO size and adhocracy culture on the relationship between proactive personality and entrepreneurial intentions (*Hypothesis 4*)



DISCUSSION AND CONCLUSION

The purpose of this paper was to provide more fine-grained insights into *whether* and *how* department membership affects academic entrepreneurship, through the use of multilevel analysis. First, drawing on a sample of 2,652 researchers from 386 departments in 24 European universities, our findings indicate that, in addition to the influence of the individual and the overall organization, the subunit or department level does matter for academic entrepreneurship. What is more, while the variation in entrepreneurial intentions between researchers was primarily dependent upon individual differences, the department effect outweighs the university effect. This observation is in line with Kozlowski & Klein’s (2000: 20) notion of bond strength, or “the extent to which characteristics, behaviors, dynamics, and processes of one level or unit influence the characteristics, behaviors, dynamics, and processes of another level or unit”, which increases with proximity. In view of that positive association, individuals are more likely to be influenced by their personal attributes, followed by subunit level characteristics, and then by organizational factors. Hence, we conclude that the department is at least as important as level of analysis as the university. Second, we identify a department’s adhocracy culture as explanatory factor for entrepreneurial intentions in academia. Researchers working in departments with a value system that emphasizes flexibility and an external orientation, show a greater propensity to become an entrepreneur. Next to this cross-level direct effect, building on insights from TAT, we find a department’s adhocracy culture to act as a moderator as well. In particular, researchers’ proactive personality traits are more likely to be translated into entrepreneurial intentions in strong adhocracy cultures. Finally, our analyses also extend understanding of the interplay between individual, subunit and organizational antecedents of entrepreneurial intentions. A combination of a strong adhocracy culture at the department level and a large TTO at the university level reinforces the positive effect of a proactive personality on entrepreneurial intentions.

Our results have several implications for theory and practice. For academia, this paper makes a number of contributions to *the (academic) entrepreneurship literature*. First, our study presents a conceptual framework and related empirical validation that reflects the multilevel nature of entrepreneurship, which has been presented as a fundamental direction for future

research by many scholars (Davidsson & Wiklund, 2001; Shepherd, 2011; Zahra & Wright, 2011). At the same time, we also respond to similar calls for contextualization, which have specifically been made in the literature on academic entrepreneurship (Djokovic & Souitaris, 2008; Lockett et al., 2005; Markman et al., 2008; Rothaermel et al., 2007). In particular, in contrast to the vast majority of studies describing single-level models, we adopt a multilevel lens and bridge the micro- and meso-level of analysis. Mapping out such cross-level relationships contributes to a more holistic understanding of (academic) entrepreneurship. Furthermore, this study overcomes the challenge to theorize multilevel effects (Kozlowski & Klein, 2000), by integrating insights from person-situation interaction theory. Second, our research extends previous academic entrepreneurship literature, which has predominantly focused on the organization as a whole (i.e. inter-university differences) and has almost neglected subunits (i.e. intra-university differences), by showing that departmental influences deserve closer scrutiny. Specifically, we provide empirical evidence that, beyond the individual-level effects, researchers' entrepreneurial intentions are primarily dependent upon departmental characteristics rather than university factors. Third, while the organizational behavior literature has underlined the importance of subcultures (Hofstede, 1998; Schneider et al., 2013; Trice & Beyer, 1993), so far, the entrepreneurship literature has largely overlooked the impact of the cultural values of departments in which individuals reside. Our findings demonstrate that additional insights can be gained by considering the role of department culture when studying entrepreneurial outcomes, both directly and indirectly. Fourth, building upon TAT, our study identifies adhocracy culture as a contextual moderator for proactive personality, as such responding to calls by Crant (2000) and Erdogan & Bauer (2005) to explore how the relationship between proactive personality and behavioral outcomes may be dependent upon situations. Finally, we also contribute to the emerging stream of studies on entrepreneurial intentions in academia, by highlighting how these can emanate from the interaction between individual and context.

From a practical point of view, especially for *university managers and policy makers*, our examination of differences in entrepreneurial intentions across the three levels of analysis is valuable in order to assign their restricted resources to the most influential factors rather than peripheral ones. Given that the impact of the subunit level should not be underestimated, it may be desirable not to focus all efforts at the central university level, and to enlarge departments' autonomy to take initiatives that strengthen the entrepreneurial agenda. Further, recent studies have given attention to the different organizational structures that TTOs can take and how decentralized models, in which TTOs are operationally involved in departments have become more prevalent in universities (Bercovitz et al., 2001; Huyghe et al., 2014). By highlighting the impact of departments, our findings suggest that such decentralized TTO structures may be more conducive to entrepreneurial activities than merely centralized models. Specifically, through their interactions with industrial companies (i.e. potential customers, partners and suppliers) and research teams in other departments, decentralized TTOs could contribute to the development of externally-oriented cultures within departments, and thus enhance researchers' entrepreneurial intentions. Correspondingly, while policy makers have mainly provided funding for infrastructure at the central university level, including TTOs, science parks and incubators (Phan et al., 2005), it could be beneficial to partly shift their attention to the support of departments. In particular, our results suggest that government initiatives that are mainly targeted towards universities are likely to have a limited impact on encouraging entrepreneurial endeavors, unless they take better account of departmental influences as well as individual attributes of academics. Finally, our research also provides guidance for *department heads* seeking to encourage academic entrepreneurship. For instance, they could create an adhocracy culture by promoting risk taking and outward thinking, through their leadership style or by launching initiatives that stimulate researchers' active search for commercial opportunities

(e.g., collaborations with other departments or institutions, participation in innovation clusters or technology transfer courses).

Our work has a number of limitations that raise opportunities for future research. First, our findings are based upon cross-sectional data, and therefore, we could not establish the causality of our results. Longitudinal research designs would enable to add a fourth level of analysis (i.e. temporal variation) in order to give attention to causal inferences and evolutions over time, and to assess the impact of context dynamics. Second, we deliberately focused on Quinn & Rohrbaugh's (1983) competing values framework and provide insights into the influence of a department's adhocracy culture. However, as numerous models have been developed in the organizational culture literature (Detert et al., 2000), we encourage future studies to employ alternative operationalizations or to concentrate on specific key dimensions of culture. Along the same lines, future research could borrow concepts and theoretical underpinnings from the broader organizational behavior literature, such as subunit climate (strength) (Schneider et al., 2013), in order to further disentangle the impact of the department level on entrepreneurial intentions. Finally, the generalizability of our findings outside the academic entrepreneurship context warrants further research. For instance, future studies could assess to which extent our results hold for other explorative processes or behaviors, such as product innovation and corporate entrepreneurship, in settings where individuals are likely to be influenced by cues in their proximal environment and in the organization as a whole.

Despite these limitations, to our knowledge, our study is the first to delineate the multilevel attributes of academic entrepreneurship, thereby specifically focusing on the cross-level effects of department culture. We hope to inspire future studies to utilize multilevel theories and research designs in order to examine the intersection of the entrepreneurship and organizational behavior literatures.

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How Goal Orientation, Self-Efficacy and Expertise Influence Attitudes After Firm Failure

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How Goal Orientation, Self-Efficacy And Expertise Influence Attitudes After Firm Failure

Principle Topic

Although most firms fail (Knott & Posen, 2005), the same cannot be said for entrepreneurs (Sarasvathy & Menon, 2003). Many more firms enter and exit the market than entrepreneurs (Sarasvathy & Menon, 2003) suggesting that for a subset of entrepreneurs, failure is not fatal, rather an inherent experience in their chosen career path.

Recent research has focused on explaining why some entrepreneurs exit self-employment as a career after experiencing failure, citing the psychological and financial costs as a result of failure being difficult to overcome (Ucbasaran, Shepherd, Lockett, & Lyon, 2013). Prior to re-entering entrepreneurs need to recover from these costs to enable them to have sufficient personal resources to focus on the new venture (Shepherd, Wiklund, & Haynie, 2009). Yet this conceptualization of failure as a negative experience that pushes entrepreneurs away from their chosen career path challenges the previously held view of failure having positive outcomes, whereby the failure can form the basis for learning where the new knowledge can be applied in subsequent firms (see McGrath, 1999; Sitkin, 1996; Timmons, 1994).

Thus there is some discrepancy in the literature about whether firm failure should be viewed as the death knoll for an entrepreneurial career, or instead if failure should be viewed as part of a potentially ongoing entrepreneurial career. In this paper we investigate an entrepreneur's attitude towards a career as an entrepreneur after experiencing failure by focusing on the extent to which they view failure as a learning opportunity and the extent to which they view failure as a potentially stressful experience. To do this we build on the Dweck and Leggett's (1988) social-cognitive approach to motivation and personality. Central to this theory is that individuals are likely to either embrace a learning goal orientation or a performance goal orientation and this influences how the individuals respond to failure (DeShon & Gillespie, 2005). Using this framework we develop hypotheses that relate an entrepreneur's goal orientation to their attitudes towards a career as an entrepreneur after experiencing failure. We also develop hypotheses concerning how the nature of the relationship between goal orientation and motivation is dependent on the entrepreneur's prior start-up experience. In so doing, we take into consideration the nature of the entrepreneur's prior experience and how this influences the entrepreneur's processing of their failure experience.

Method

To test our hypotheses we develop a unique dataset of entrepreneurs who recently experienced firm failure and filed for firm bankruptcy. The sampling frame was all firms which filed for firm bankruptcy in Sweden during the four month period March 2010 to June 2010 – a total of 1328 limited liability firms. 310 telephone interviews were conducted with active owner managers and a 154 mail questionnaires were returned. Established measures were used to operationalize the constructs in the model and hierarchical linear regression analysis was used to test the hypotheses.

Results and Implications

In this paper we examined entrepreneurs' attitude towards a career as an entrepreneur after experiencing firm failure within the framework of goal orientation. Prior research on entrepreneurial failure has highlighted that the emotional and financial impact of failure can decrease an entrepreneur's entrepreneurial motivation (Shepherd et al., 2009). We add to this literature by showing how an entrepreneur's goal orientation in achievement settings

influences his or her attitude towards continuing to pursue a career as an entrepreneur. Our results show the importance of considering an entrepreneur's attitude for the likelihood that they will continue to persevere in the entrepreneurship process, rather than assuming that all firm failures are either inherently good or bad for their career continuation.

In addition, by taking into consideration the extent of prior experience of the entrepreneur we were able to show that having a learning goal orientation, whereby failure is viewed as an opportunity to learn and a challenge to master, can compensate for lack of experience. This suggests that for novice entrepreneurs attitude towards failure is relatively more important for the likelihood that they will continue to pursue a career as an entrepreneur despite experiencing setbacks. In contrast, for more experienced entrepreneurs their prior experience as entrepreneurs tends to influence their career continuation more so than their learning goal orientation.

Putting On a Brave Face: Emotional Dissonance and the Exit Decision

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Putting On A Brave Face: Emotional Dissonance And The Exit Decision

Principle Topic

Recent research in the entrepreneurship field has started to focus on entrepreneurial failure and, in particular, the experiences of entrepreneurs post failure (references). Often failure is an emotional experience where entrepreneurs can experience loss of identity (Shepherd & Haynie, 2011), loss of self-esteem (Jenkins, Wiklund, & Brundin, 2014) and grief (Shepherd, 2003). Most of this research, however, has focused on the entrepreneur's experience post failure. Building on the work of Shepherd, Wiklund, and Haynie (2009) who suggest that entrepreneurs may delay formally exiting their ventures to minimise the emotional costs of failure, we investigate the experiences of entrepreneurs prior to formally exiting the venture, how this influences the exit decision and their experiences post failure. To do this, we take a narrative interview approach and interview entrepreneurs who had recently experience firm failure about the time leading up to the failure and the time after the failure. We focused on entrepreneurs in the retail sector. In this sector, failure can be a very public event given the prominent shop front of retail stores. This can increase the stigma associated with failure and heighten the emotions surrounding the decision.

Method

We take an interview narrative approach and interview entrepreneurs about their failure experience. We asked them to tell us about their venture creation story starting from the decision to found the venture to where they are today. Each respondent was interviewed at least once and the interviews lasted over two hours. We analysed the narratives using within case and then cross case techniques. We then took an iterative abductive approach where we draw on existing theory and develop new theory to help explain our findings.

Results and Implications

We found that the decision to shut down the business was a snap decision when the entrepreneur hit the wall. This was decision was often taken without consulting business partners or family members. Rather than it being external factors that triggered the exit decision, the decision was made in response to building emotional exhaustion. Entrepreneurs described the challenge of having to play the role of jovial shopkeeper day in day out while facing the economic challenge of trying to keep the business afloat. Displaying the expected emotions to customers became more and more difficult as the entrepreneurs became more and more exhausted. Thus, while the emotional exhaustion slowly built up over time, the shut-down decision was made when in hast when the entrepreneur simply did not have the energy to keep on displaying the expected emotion.

Our findings make three key contributions to the literature. First, we suggest that theories on emotional dissonance can be used to help understand the shutdown decision in failure situations. Second, our findings provide an additional explanation as to why entrepreneurs can feel emotionally exhausted after failure. Third, our findings contribute to theories on emotional labour which has historically focused on workers where there is a clear distinction between the organization and the worker.

Research to Innovation: Factors Contributing to Successful Innovation from Rural Research Funding

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Research To Innovation: Factors Contributing To Successful Innovation From Rural Research Funding

Abstract

Rural Research and Development Corporations (RDCs) are a feature of the Australian national system of innovation, which provide a mechanism by which industry (through levies) and government jointly fund research and development. There is a need to be more effective in ensuring that research outputs are implemented by industry (innovation). Innovation systems approaches have been developed to explain the innovation process and guide policy. Innovation systems thinking has not been subjected to rigorous testing that would validate its usefulness as a policy or management tool. This research is concerned with testing theories of innovation failure, developed through the framework of sectoral and technological systems, and thus aims to learn more about the factors necessary to ensure that research has the best opportunity to result in innovation. Food safety projects in the Australian red meat industry are used as a multiple case-study. The innovation system may not operate uniformly, therefore, a more complete understanding of the system may be obtained by the investigation of individual research projects (cases). A multiple case-study approach is being taken. The proposed analytical tool will be Qualitative Comparative Analysis based on the application of set theory, allowing rigorous testing of multiple cases and the predictions of theory.

Introduction

Australian Government funding for rural research and development (R&D) has held a significant and long-term position in Government rural policy. The current incarnation of rural R&D organisations was enabled by the Primary Industries and Energy Research and Development Act 1989 [1]. The objectives of this Act, and previous Acts were to provide a mechanism for socialised industry research in a co-investment model, with funds coming from statutory levies with matching funds from the Australian Government. The research and development corporations (RDCs) created for various rural sectors were expected to develop R&D programs to reflect industry priorities, and facilitate the dissemination, adoption and commercialisation of research results. The research was aimed to increase economic, environmental and social benefits for Australia, achieve the sustainable use and management of natural resources and make more effective use of human resources and skills [2].

Research conducted by scientists and technologists are building blocks or starting points for technological innovation. There is often an assumption that, if the 'right' research is conducted then it will lead to innovation and consequently, economic benefit through commercial or other channels [1, 3] and thus, little attention is given to activities beyond the supply of research outputs and a facilitating role in subsequent innovation. There is a need for researchers and RDCs to ensure that investments in R&D lead to innovation within rural industries but it is not clear how that should happen.

This research seeks to understand why and how research may not stop at outputs (results, such as might be embodied in research publications and reports) but may lead to innovation (change in practice). Two innovation system frameworks (sectoral and technological innovation systems) are considered and the existing analyses of innovation system failures are identified as being theoretical in structure. Having identified these approaches as theories, an approach is suggested for testing those theories. Testing the theories to determine which is more suitable to predict innovation may help RDCs and government to maximise the impact of research and development funding.

This paper first reviews innovation system approaches, particularly sectoral and technological innovation systems and then presents prominent approaches to the analysis of innovation

system failure arising from these frameworks. The theoretical nature of the innovation system failure approaches is identified, and an approach to testing the theories using multiple case studies and Qualitative Comparative Analysis is presented.

Innovation Systems

The linear model of innovation, in which ideas are developed from laboratory to prototype to final commercialisation, often by a single inventor/entrepreneur, or within the one firm, has been an influential model through the twentieth century [4]. It has long been discarded by many innovation scholars, [5]. The study of innovation systems (IS) or systems of innovation (SI), which admit the complexity of innovation, and seek to understand the necessary environments and interactions for successful innovation have become a common approach to understanding innovation and have proven to be useful tools.

Innovation systems thinking had its genesis in the 1990s as an holistic attempt to 'describe, understand, explain - and perhaps influence - processes of innovation' [6]. The approach rises from evolutionary economic theory, a sense of dissatisfaction with the inadequacies of 'market failure' arguments, and the assumption that firms act alone, sociology and an understanding of the significance of institutions [7, 8]. Innovation systems are a conceptual framework rather than a theory, which seek to maintain conceptual ambiguity in an attempt to encompass all important factors in innovation [6]. Hoppmann *et al.* [9] note that "Analysis of innovation systems has proven a powerful heuristic for identifying starting points of policy interventions". Governments (including Australia) and international organisations have adopted the concepts of innovation systems thinking [10].

Key aspects of innovation systems are the emphasis on institutions, the dynamic nature of actors within the system, and the boundaries that nevertheless allow a system to be defined.

The concept of institution is central to innovation systems, rather than being assumed, as in other approaches to innovation [6]. Institutions have been described as identifiable organisations such as universities, financial organisations, and government agencies, formal frameworks such as legal systems, intellectual property systems, economic policies, or informal aspects such as common habits and established practices within an industry sector [6, 11, 12]. The institutional component of innovation systems has commonly been divided to the intangible (or, soft) aspects of habits, norms, routines, practices, rules and laws, and the tangible (or, hard) aspects of the system, non-firm organisations (for example, universities, government, regulatory bodies), being considered the organisational component [13].

The tangible organisational structures of firms and non-firm organisations may be considered to be 'players', 'agents' or 'actors' [13, 14]. Firms may be the producers of goods and services and also the users of those goods and services or their suppliers [14], which is why the generic term 'actor' is usually used. Actors are most often to be considered to be institutions, or firms rather than individuals. Innovation systems are considered to be populated with heterogeneous actors.

The activities occurring within innovation systems are broadly directed at the creation, diffusion and exploitation of knowledge and ideas that become innovation, encompassing activities that extend beyond conducting research activities to the building of competence within firms and other organisations, creating and changing organisations and institutions to maximise innovation outcomes, as well as business services [13].

With such vague, conceptual definitions of systems of innovation, it may seem that every aspect of technology and innovation is connected, and to some degree this is true. However, boundaries may be set to define an innovation system. In practice, four influential approaches have been taken to defining systems of innovation: the national, regional, sectoral and

technological approaches. [13]. Spatial limitation may be to national or regional boundaries, sectoral limitation may be to a particular product or service field and limitation by technology provides the opportunity to consider technological innovation free of other limitations. From these perspectives, boundaries can be framed to define a system of innovation in a way that suits the purpose of the analysis.

Innovation within an economic sector, sectoral innovation systems (SIS), clearly are based on earlier work on technological systems [15] but are more clearly focussed on those firms involved in innovation activities and competition between those firms in an innovation environment. Patterns of innovation and development are known to be different in different economic sectors [16]. The study of innovation systems within sectors has sought to understand how innovation occurs within and between firms within a sector of the economy, which may, or may not, be within geographic or national boundaries. A sectoral system of innovation may be defined as being 'composed of a set of new and established products for specific uses, and a set of agents carrying out activities and market and non-market interactions for the creation, production and sale of those products' [17]. Sectoral innovation systems are acknowledged as a flexible, holistic and interdisciplinary approach to understanding innovation of products and services within an environment influenced by multiple actors and institutions. They are frequently defined as being composed of actors, interactions of those actors, institutions and infrastructure [13, 18].

A technological innovation system (TIS) may be described as a 'network of agents interacting in the economic/industrial area under a particular institutional infrastructure and involved in the generation, diffusion, and utilization of technology' [19]. A technological innovation system can be defined as containing all the components necessary to influence the innovation process for a particular technology [20] and analysis may proceed from consideration of customers, products and/or technologies [21]. The four structural elements of a technological innovation system are actors, their networks, institutions and technology [22]. Technological systems are considered to have the characteristics of economic competence (ability of firms to develop and exploit opportunities), clustering of resources and institutional infrastructure [19] but not all technological systems have innovation as a purpose.

The study of innovation within a technological innovation system framework may also be conceived as being within a national and/or sectoral innovation system [23, 24] which suggests that analyses of innovation may occur from several perspectives and levels. The domains defined within sectoral systems could clearly be technologies, and represent the identified intersection between sector and technology. Innovation may be studied with differing levels of perspective, from the small scale niche [25] to the broad scale of industrial transitions [26]. Analyses may extend to the 'socio-technical regime' innovation necessary to transform both industry and society for example, transformation towards sustainable production and consumption [27].

Innovation System Failures

Various diagnostics and heuristics have been developed to understand, and change the direction of innovation within innovation systems. Sectoral and technological innovation systems literature offer the possibility of understanding how and why investment in R&D may (not) lead to an innovation outcome. A comparison of sectoral and technological systems [28] has identified many similarities in these theoretical approaches.

The inadequacy of market failure to explain the inability of markets, with or without government intervention, to promote innovation is a fundamental premise of the innovation

system literature [29]. Early proponents of innovation system have declared that 'the conventional approach to public [innovation] policy - which is based on market failure - is no longer adequate' [30]. Despite these very dismissive-sounding statements, innovation systems do admit that market failures may play a part in innovation failure, and that innovation systems and markets both require analysis. In fact, TIS functional failure theory specifically recognises the formation of markets as an essential function for innovation systems [29] and within the SIS stream, market failure has been specifically included by authors who initially supported its removal [31].

Within the innovation systems literature, rejection of market failure as the sole reason for failure of innovation was replaced by the concept of innovation system failure [18]. The terms 'imperfection' [18, 32] and 'problem' [33, 34] may also be used as well as 'failure' [18, 33] to describe the condition of elements of the innovation system. It is proposed that systems may be described as failing if innovation does not occur at all, or falls short of potential, and this result may be due to problems with certain elements of the innovation system. These elements may be operating imperfectly, but these imperfections may, or may not be sufficient, for that element of the innovation system to be a problem to the operation of the entire system.

Within the sectoral innovation literature, a frequently cited paper on diagnosis of innovation system problems from a sectoral perspective has been proposed by Klein Woolthuis, Lankhuizen and Gilsing [18], while within the technological innovation systems literature, an approach to the understanding of functions within innovation systems has been proposed by Bergek and others [20], also frequently cited, to explain failure of technological innovation systems. Neither paper claims their work to be the development or espousal of theory; rather as approaches to analysis and policy intervention based on empirical studies of their own and others. If these approaches to the diagnosis of innovation system failure are to have certain value for policy development then the ability of these approaches to predict the success of an innovation system then needs to be carefully analysed to determine the theory they espouse and the claims that they make. Hunt [35] cites the definition of Rudner (1966) that identifies theories as being systematically related statements that contain law-like generalisations that are able to be empirically tested. Are the approaches of Klein Woolthuis and Bergek theories?

Klein Woolthuis *et al.* [18] base their ideas (both Bergek *et al.* [20] and Wieczorek and Hekkert [36] refer to this approach as 'structural') on the assumptions of sectoral innovation systems: that innovation does not occur in isolation, institutions are critical and evolutionary processes play an important role in determining innovation outcomes. They acknowledge that imperfections can occur and seek to define these system imperfections, or problems. The key distinction in their work is between system rules and the actors in the system. The authors claim that this approach allows the analysis, justification of policy intervention and evaluation of innovation systems, identifying the causes of failures and the actors who need to be addressed to make change. These propositions qualify as theory because they are all related to the success of an innovation system, are generalised to sectoral innovation and are open to evaluation. The authors provide two examples of how their approach can be used to address innovation failure.

Bergek *et al.* [20] provide an alternate approach to analysis of innovation system failure (identified by Wieczorek and Hekkert [36] as a functional approach). It must be noted that Bergek *et al.* utilise the approach of Klein Woolthuis *et al.* as a step in their analysis and characterise the approach as essentially a structural one because each failure is related to a structural component of an innovation system. While Bergek *et al.* acknowledge that "we need to supplement a structural focus with a process focus" (p.409) their approach is otherwise independent of Klein Woolthuis *et al.* and subsequent work utilising Bergek *et al.*'s theory rarely seek to combine approaches.

Bergek *et al.* claim that certain processes, or functions, need to occur for innovation to occur. They also suggest that certain inducement or blocking mechanisms may act to encourage or hinder the innovation process. Government policy must be directed towards overcoming these blocking mechanisms, if innovation is to occur. These propositions qualify as theory because they are all related to the success of an innovation stem, are generalised to technological innovation and are open to evaluation. Hekkert *et al.* [24] made a very similar proposal to Bergek *et al.*, but Bergek *et al.* is analysed because it was published later and because, even recently, Bergek *et al.* has been described as the 'best attempt ... to integrate the different concepts.' [36].

The two theories are not in opposition to each other; rather they arise from different analytical frameworks (sectoral and technological innovation systems) and therefore focus on innovation systems from different perspectives. Due to epistemological differences [28] they may not easily be reconciled, so the question is not whether one is correct or incorrect, but following the desire of innovation system scholars [6], the question is a pragmatic one: is one more insightful or useful than the other?

Structural Problem Theory- The theory of Klein Woolthuis *et al.* is based on the work of others who have made empirical observations and described the 'imperfections' of the innovation systems studied. Klein Woolthuis *et al.* cites the work of Carlsson and Jacobsson [30] who described failures in technological systems as failures of networking, institutions or systems (actors, regional or national systems), Smith [37] description of infrastructural and institutional failures and Edquist *et al.* [11] description of institutional and interactional failure. One significant contribution of Klein Woolthuis' was to consolidate the described imperfections, and standardise their description. The second was recognising the distinction between 'rules' and 'players' which allowed system problems to be described in two dimensions, thereby, allowing problems to be clearly defined, and amenable to rational policy response.

In the first dimension Klein Woolthuis *et al.* define various types of actors

- demand (consumers, large buyers),
- companies (large firms, multi-national corporations, small to medium enterprises, start-up companies),
- knowledge institutes (universities, technology institutes), and
- third parties (banks, venture capitalists, intermediaries, consultants, sector organisations employers)

This list of actors was not considered to be exhaustive (an alternative typology of actors is proposed by Lamprinopoulou *et al.* [38]). Policy makers are also actors, but, in the structural model, are not defined as such because they are assumed to be the system analyst and policy developer.

In the second dimension rules (system failures) are categorised as:

- infrastructural (information and communication technology, energy supply, roads, railroads, telecommunications, scientific and applied knowledge and skills, testing facilities, possibilities for knowledge transfer, patents, training, education),
- institutional (hard: formal written consciously created, and soft: informal, spontaneous and unwritten 'rules of the game')
- interaction (weak network failure due to poor connectivity between actors, strong network failure, such as group of actors dominated by one partner, an internal orientation and failure to seek new approaches), and
- capabilities of the actors (lack of competence, capacity such as resources).

This "SI-policy framework" is depicted by Klein Woolthuis and others [32, 39-41] as a table with actors being assigned to columns, and system imperfections being assigned to rows. The intersections allow observations of system imperfections to be assigned to actor/s, and thereby made explicit.

Functional Problem Theory- The work of Bergek *et al.* [20] is within the stream of scholarship on technological innovation systems [19]. The theory draws on work on an understanding of entrepreneurs operating in a socially constructed systems [42], coalitions advocating for change [43], and strategic niche management [25]. The intent of this theory is to describe the functions of innovation systems, and how these operate dynamically (that is, over time). This approach to the process of innovation had the stated intent of supplementing the structural focus. It is based on several previous publications proposing a list of functions operating within innovation systems, but does not claim to provide a complete list. A very similar list was published by Hekkert *et al.* [24] at about the same time

.Bergek *et al.*'s list of functions within technological innovation systems are:

- knowledge development and diffusion - creation and exchange of knowledge
- entrepreneurial experimentation - investigation of new technologies and applications
- influence of the direction of the search - organisations choosing to enter the TIS and influencing the direction of innovation
- market formation - articulation of demand and capability to form a market
- development of positive externalities - entry of new firms to reduce uncertainties
- legitimization - social acceptance by relevant actors
- resource mobilization - provision of human, financial capital and infrastructure

The theory of functional problems of innovation systems, aims to produce an analytical framework useful for policy makers. The structural components of the TIS are identified (actors, networks, institutions) and key processes or 'functions' operating within TIS are identified. The functions are seen as being characteristic of the TIS rather than being linked to a particular actor, and this functional pattern can then be assessed, the factors 'inducing' or 'blocking' the system can be diagnosed. The benefit of this analysis is that the functional approach is explicit about the functions of the innovation system which allows for the identification of policy problems and renewed policy intervention.

Combining Structural and Functional Problem Theories- Vidican *et al.* [44], studying the emerging solar energy sector in the UAE, have argued that, when investigating the emergence of new industries, it is necessary to consider the multiple knowledge and technological bases that contribute to the development of a sector, rather than taking a functional failures approach exclusively.

Wieczorek and Hekkert [36] suggest that functional analyses alone is incomplete. They note that Bergek's model is the 'best attempt ... to integrate the different concepts' (p.75) but does not need to utilise the concept of inducing and blocking mechanisms since these are similar to the problems identified by Klein Woolthuis *et al.* as systemic (structural) problems. Also, Bergek does not elaborate on the capabilities of actors, network and institutions. Wieczorek and Hekkert suggest that the theories of Klein Woolthuis and Bergek can be combined, since they have the same scholarly foundation.

Lamprinopoulou *et al.* [38] proposed and exemplified an integrated framework utilising both structural and functional analysis to compare two national agricultural innovation systems which were then used to perform a transformation oriented analysis [45] to consider how these innovation systems might be further developed. The authors found that the tools used of an

integrated framework of structural and functional analysis were complementary and appropriate to provide a holistic perspective.

Absence of comparisons or evaluations- The literature does not report any evaluations of the structural and functional failure theories. There have been a larger number of studies utilising the structural or functional theories but none have studied the adequacy of the models, other than by a qualitative assessment of the usefulness as a framework. Even in the work of scholars who acknowledge both theories, there has been no comparison or evaluation of the suitability of the theories, other than comparisons that might be made based on existing background knowledge and opinions about their comprehensiveness or suitability.

Key Propositions / Method

Given the desire to improve the outcomes of Australian rural research, and the approaches of innovation systems, and the theories of innovation system failure, are the structural and functional theories able to explain the ability of the research outputs to achieve innovation?

The innovation failure frameworks developed within the sectoral and technological innovation systems literature have not been considered as theories and tested in other than a subjective manner. There has been a tendency to evaluate the theories at a system, and therefore, general level. The suggestion of the multi-level perspective (Markard & Truffer 2008) is that "system level" activity may be perceived as the sum of all micro-level activities (Jacobsson, T & Jacobsson 2014); therefore analysis at a lower level may yield useful data for theory testing. Additionally, such analysis would likely shed light on the claim that, despite the application of the SI approach little is known about how the system actually operates [7, 46].

This work aims to subject the structural and functional theories to evaluation based on a retrospective analysis of multiple projects with possible innovation outcomes within a space defined by a single sector and technology. The collection of data about multiple projects within a single sectoral/technical innovation system domain, qualifies it as a multiple case study method [47]. The proposal to determine which (if either, or a combination) approach best explains innovation in the chosen context is what Van de Ven [48] calls a variance model to 'seek explanations of continuous change driven by deterministic causation, with independent variables acting upon and causing changes in dependent variables' (p.149). The data collected (unit of observation) are consensus opinions on individual research projects that have been conducted within a single research program.

The collected data are analysed to answer a question (unit of analysis) about the relationship between the independent variable (condition) of successful research and the dependent variable (outcome) of achieved, or anticipated, innovation. Research outputs, such as final reports on research contracts, reports written for an industry audience or scientific publications may be considered evidence of successful research. An innovation may be determined based on evidence of change within the sector attributable to the research, which may be during, or subsequent to, the research stage. An innovation, or potential for innovation, can be identified according to the classic (Schumpeter) classification of innovations [49], tailored to the sectoral and technological domain. A retrospective study can utilise a survey of participants (representing different actors such as researchers, industry, regulators, etc.) in past projects to determine a consensus (or consensus per actor) measure of the elements of the theories and the innovation outcome. Statistical methods would be utilised to seek correlations, and therefore the fit between the model proposed by the theories and the outcome measures.

Qualitative comparative analysis (QCA) is the proposed method of analysis. Qualitative comparative analysis is based on set theory and has been developed over the past 25 years in

three forms: crisp sets, fuzzy sets and also a form able to be used with multiple-category conditions[50]. Over 300 peer-reviewed journal articles have made use of QCA methods [51] particularly in sociology and politic science. The *Journal of Business Research* published eight articles using QCA between 1995 and 2011. Two recent English language texts have been published [52, 53]. QCA arises from the case study tradition in which there is a desire to analyse the results of multiple case studies and seeks to find the least complex set of variables causally related to the outcome, while acknowledging the possibility of multiple paths may lead to the same outcome [54]. An example of the set-theoretic Boolean logic employed in CSA, the analysis may seek both necessary and sufficient causal conditions to explain the outcome [55].

Food safety in the Australian red meat sector has been chosen as the subject for study since

- the Australian red meat industry defines a sector for the purpose of innovation, with relatively uniform conditions
- food safety defines a technology for the purpose of innovation, with relatively uniform conditions
- availability of information on this industry funded research area (Australia's rural research system)
- access to information about research projects (willingness of Meat & Livestock Australia and the manager to cooperate)
- limiting the contextual/environmental differences of the research projects under study will enable a case-control study to be conducted [56] of research that led to achieving innovation and those that did not.

Results and implications

The multiple case-study approach to projects in one sectoral/technological innovation system will allow the adequacy of the systems failure theories to be tested. The work may be directly applicable to innovation within similar sectoral or technological systems, as well as more broadly. Further insight into the systems of innovation thinking may be gained, which will impact both on the management of individual projects, particularly relevant for those (such as RDCs) who are intermediaries between the many actors in the innovation space and on research and innovation policy.

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Three Things Matter for Entrepreneurship: Location, Location, Location”: Exploring the Effect of a Country’s ‘Place’ on its Entrepreneurial Activity Level

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Three Things Matter For Entrepreneurship: Location, Location, Location”: Exploring The Effect Of A Country’s ‘Place’ On Its Entrepreneurial Activity Level

Does the place in the world where an entrepreneur engages in the creation of new ventures matter? Although current theories exploring entrepreneurship activity levels across countries have contributed significantly to our understanding of the constraints and opportunities faced by local entrepreneurs, all of these arguments only use local conditions (economic, institutional and even cultural factors) to explain the focal country’s entrepreneurship level. This paper develops and tests empirically a framework uncovering the role of the location (a focal country in a relation to the world’s economic networks) when explaining differences across countries on the level of entrepreneurship activity. In testing these ideas we rely heavily on the GEM data set and recent developments in assessing the place of focal countries in the world economy from multiple perspectives. Implications of preliminary findings for research and local policy makers are discussed.

Stop Knocking Entrepreneurs – How to Mitigate the Effects of Tall Poppy Syndrome on Entrepreneurs

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Stop Knocking Entrepreneurs How To Mitigate The Effects Of Tall Poppy Syndrome On Entrepreneurs

Abstract

New Zealand has been long associated with Tall Poppy Syndrome (TPS), whereby high achievers in a variety of fields are ‘knocked’ by others. This paper presents findings from a mixed methods study of 25 entrepreneurs in New Zealand. It focuses on what mitigating factors there may be for entrepreneurs in how they experience TPS. Various mitigating factors were found that varied the degree to which entrepreneurs experienced TPS. Qualitative results showed that participants believed an entrepreneur’s personality, detractors’ social class, location and the small size of New Zealand impacted the degree of TPS they experienced. Statistical analysis found additional factors such as the level of annual sales and education levels of the entrepreneurs play a role in whether entrepreneurs experience TPS. Results based on a multiple regression analysis of personal experience of TPS controlling for age, gender and education of the entrepreneur indicate that there may be a ‘sweet spot’ where TPS has little impact, and this is when the businesses annual sales are in the \$ 500,000 - 1 million sales mark. Findings show strategies that entrepreneurs employed were to carefully manage their relationship with staff and work hard, hide their wealth and their business ownership from others.

Introduction

Tall Poppy Syndrome (hereafter TPS) is a phenomenon that appears to be synonymous with New Zealand’s culture. Tall Poppy’s are defined as “a person who is conspicuously successful and whose distinctions frequently attracts envious notice or hostility”. Tall Poppy Syndrome (hereafter TPS) is “the New Zealand habit of denigrating or ‘cutting down’ those who are successful or who are high achievers” (Deverson, 1998 pg 833). TPS is considered to be a culturally specific to Australasia. Interestingly, in cross cultural studies of TPS, people’s responses to TPS were not significantly different to those in other countries (Feather, 2005). However, Feather (2005) suggested Australia has a specific social psychology, and TPS’s roots appear to stem from the cultural value of egalitarianism that exists in Australia and New Zealand (Hugo, 2006; Peeters, 2004; Trevor-Roberts, Ashkansay, & Kennedy, 2003). This contrasts with the United States context, whereby meritocracy is the dominant cultural ideology (Mandisodza, Jost, & Unzueta, 2006).

While TPS is often referred to in the media and in practitioner literature, it has yet to receive a great deal of attention from academics in any discipline (see Kirkwood (2007) for a more detailed review of the literature). Of the small number of academic research on TPS, studies have been limited to the Australia and New Zealand contexts. Research began on Australian Tall Poppies when psychology scales were applied to fictional scenarios regarding the fall of a Tall Poppy (Feather, 1989). In fact, the majority of research of TPS uses similar hypothetical vignettes to understand the phenomena (Mandisodza et al., 2006). The present study focuses on a real-life situation, by addressing what strategies entrepreneurs employ to manage TPS in their own businesses, and what they believe to be factors which affect the extent of TPS on entrepreneurs in a wider societal sense. First, the limited literature on TPS is outlined, before a more specific understanding of the New Zealand context of entrepreneurship is detailed.

Literature review

The extant research on tall poppies has focused on only a few ‘types’ of tall poppies. These have been students (Feather, 1989), sports figures (Feather, Volkmer, & McKee, 1991; Motion, Leitch, & Brodie, 2003; Peeters, 2004) and politicians and entertainers (Feather et al., 1991).

In New Zealand, the first study on TPS involved the case high-achieving academic (Mouly & Sankaran, 2002) and most recently, a study of 40 entrepreneurs has been conducted which found entrepreneurs are affected by TPS (Kirkwood, 2007). Studies of managers and leadership have also touched on TPS (Meng, Ashkanasy, & Hartel, 2003; Trevor-Roberts et al., 2003). These studies are outlined briefly in this literature review. First, it is important to note the breadth of these studies has been limited to Australasia. Few cross-cultural studies of TPS exist. Where research has compared Australia and the United States with respect to their views on wealth and status, some differences were found (Mandisodza et al., 2006). For example, class boundaries may be perceived by Americans to be more “permeable” and resonate with the image of the American Dream (Mandisodza et al., 2006 pg 666).

Sporting stars have had the most attention with respect to TPS (Motion et al., 2003; Peeters, 2004). In a study on branding the New Zealand national rugby team (the ‘All Blacks’), researchers noted that TPS was considered as a factor when evaluating the value of their branding (Motion et al., 2003). For example, successful people in New Zealand are expected to be modest and humble, and humility is one of the All Black’s defences against TPS and ensuring their continuing popularity (Motion et al., 2003). Similarly, a study of Australian sporting heroes show that they are loved by Australians only if they are modest and unpretentious (Peeters, 2004). These studies generally conclude that sportspeople may escape TPS altogether, or they may experience fewer effects than other high achievers such as artists, writers and intellectuals (Hugo, 2006; Peeters, 2004). While studies of TPS in sporting contexts are most common in the limited academic research, Peeters notes a disturbing notion. He observes that cutting down Tall Poppies has *become* a sport in itself (Peeters, 2004).

In business settings, cross cultural research has been conducted on wealth and leadership has been conducted. TPS may affect the economic system, whereby Americans perceive it to be more fair and legitimate than Australians when considering the upward and downward mobility of individuals with respect to wealth (Mandisodza et al., 2006). While it is fair to say that egalitarianism is present in Australian and New Zealand cultures, a detailed look at similarities and differences between the countries with respect to leadership offers more insights. New Zealand managers were found to exhibit team leadership, but there was also a strong individualism factor present, while in Australia, egalitarianism was more evident as a leadership style (Trevor-Roberts et al., 2003). Another Australian study of leadership found that the subordinates with tall poppy attitudes had a negative perception of value-based leadership (Meng et al., 2003). Those non-sporting high achievers such as business leaders and politicians have been found to be difficult to relate to and thus may experience greater levels of TPS (Peeters, 2004).

As these studies have alluded to, not everyone experience TPS in the same way. Thus, there are various mitigating factors which affect the perceptions of high achievers (Feather, 1989; Feather et al., 1991). These variables relate to people’s beliefs about how the tall poppy attained their position, their behaviour, their personality and what caused their ‘fall’ (Feather et al., 1991). Therefore, high achievers who are seen to have achieved success through ability and effort may experience fewer effects of TPS (Feather et al., 1991). A more recent study found that as long as people see the hard work and determination of high-achieving individuals, they may suffer fewer effects of TPS (Peeters, 2004). A further variable influencing the extent of TPS regards the detractor (their attitudes, values and social identity) (Feather et al., 1991). Feather (1989) also found that negative attitudes towards tall poppies were most likely to be found in respondents who rated low on self-esteem, were less concerned with achievement and social power, and were politically more left-wing.

Entrepreneurs as tall poppies

Entrepreneurs are an interesting case of Tall Poppies as the entrepreneur and his or her organisation are often inseparable (Kirkwood, 2007). Entrepreneurs have been found to rate highly in terms of their social status. Participants in the United States, Israel and Hungary were asked to rate the social status of high-tech entrepreneurs among other professions. They rated entrepreneurs as third or fourth, behind physicians and lawyers and managers (Malach-Pines, Levy, Utasi, & Hill, 2005). Based on this finding and the conclusions of prior studies of TPS on academics, sportspeople and musicians it could be argued that entrepreneurs may escape the effects of TPS because entrepreneurship clearly involves effort and ability. Founding a new business (the definition of entrepreneurship used for this study, discussed in Method section) involves the identification of a business opportunity and a conscious decision being made to start a business (often with risk-taking and uncertainty) and employ people.

Only one study has been conducted on entrepreneurs and TPS to date (Kirkwood, 2007). This study concluded that over half of the 40 participants from New Zealand had experienced TPS in their role as entrepreneurs and they employed strategies for managing its impact which included 'staying under the radar', not telling people they owned a business and not 'flaunting' their wealth. In particular, the key way that these entrepreneurs managed the effects of TPS was in relation to their assets - not buying expensive vehicles, houses or taking expensive holidays. This study suggests that the effects of TPS may have three significant implications for entrepreneurship in New Zealand (and potentially wider afield). TPS may discourage entrepreneurs from starting a business, or inhibit 'failed' entrepreneurs to establish another business because of the public reaction to their 'fall'. Finally, entrepreneurs may deliberately limit business growth because they don't want to attract attention (Kirkwood, 2007). The results of prior research concluded that the impact of TPS on entrepreneurs may be less than for other types of people (sports people, high achieving employees). This is because entrepreneurs control their own destiny and may be less affected by people who may be envious than in traditional employment or sporting selection examples (eg. leadership, promotions, hiring decisions, appraisals, team selection) (Kirkwood, 2007).

Some context on entrepreneurship in New Zealand is vital to interpreting the results of this study. New Zealand is often upheld as being highly entrepreneurial in comparison to other countries (Frederick & Chittock, 2006; Reynolds, Bygrave, & Autio, 2003). The last Global Entrepreneurship Monitor (GEM) in which New Zealand participated ranks New Zealand as one of the most entrepreneurial nations in the world in terms of early stage entrepreneurial activity and established business ownership (Minniti, Bygrave, & Autio, 2005). New Zealand was found to have the highest percentage of opportunity entrepreneurs of all 35 participating countries, suggesting that entrepreneurs in this country are pulled into entrepreneurship rather than pushed into it (necessity entrepreneurs) (Minniti et al., 2005). New Zealand's high level of entrepreneurial culture has not always been evident however. Casson (1990) rated seven countries based on the degree of entrepreneurial content of their culture using various measures such as informal custom and permanence of relations (based on Hofstede's (1984) work). Ratings for New Zealand were added by Harper (1994), who found New Zealand to have a relatively weak scientific culture, a limited division of labour in management due to the small size of most companies, a do-it-yourself mentality, and an underdeveloped systems view of production and marketing. He scored New Zealand second lowest out of the eight countries studied, with Japan and the United States having the highest entrepreneurial content in their culture (Harper, 1994). The prevalence of entrepreneurship in a country is important to this study, as it may impact on the perception people have of entrepreneurs (Malach-Pines et al., 2005). As a country with a comparatively high rate of entrepreneurship, New Zealanders may

be more accepting of entrepreneurs and their success than in other countries. However, when looking beyond the incidence of entrepreneurship activity and viewing cultural and social norms, GEM found New Zealand ranked in the middle of all countries. It found that countries like the United States, Australia and Canada have a national culture that more strongly emphasises the responsibility that an individual (not a collective) has in managing his or her own life (Frederick & Chittock, 2006).

Method

This paper reports the findings from a study conducted in 2007 of 25 entrepreneurs in New Zealand. An entrepreneur is defined here as a person (or a group of people) who creates a new business (for profit) and employs at least one other paid employee. The initial sample was selected from the *New Zealand Business Who's Who*, which lists thousands of businesses and their owners. This listing has also been used by others researching New Zealand entrepreneurs (Hamilton, 1987; Kirkwood, 2007). Researching entrepreneurs in New Zealand is difficult as there is a lack of publicly available databases listing entrepreneurs so this listing directory was purchased to use as a way of accessing entrepreneurs. The selection process was based on whether the listing indicated the owner of the business was the founder. Entrepreneurs from five cities/towns were selected. Ethical approval was gained for this study and each participant signed a consent form agreeing to participate in the research. In return, participants were assured that they (or their company) would not be identified in the research. Participants were interviewed using a semi-structured interview schedule. Questions about TPS included the following:

- 1) Do you think some people are envious of you as an entrepreneur?
- 2) Does TPS exist for entrepreneurs?
- 3) Have you ever experienced TPS? In what ways have you experienced it?

Interviews were held in five of New Zealand's largest cities/towns – Auckland, Christchurch, Wellington, Dunedin and Queenstown. One of the authors interviewed 25 participants in a face-to-face format. Demographic information about the sample is shown in Table 1

Table 1 – Sample demographics

Gender:	
Male	22
Female	3
Age:	
Under 35	3
35-39	2
40-44	5
45-49	3
50-54	2
55+	10
Education (highest level):	
Primary	1
Secondary	15
Tertiary	8
Other (trade etc)	1
Industry:	
Service	14
Manufacturing	4
Retail	4
Other	3
Annual sales NZD:	
Under \$100,000	3
\$100-500,000	6
\$500,000 – 1 million	9
1-5 million	5
5 million +	1
Undisclosed	1
Employees: (mean)	
Part-time	13.6
Full-time	2.0

N = 25

Complete interviews ranged in time from 45 minutes to over two hours, and most lasted approximately 60 minutes, where TPS was one part of a series of questions. Interviews were tape recorded and transcribed. The QSR NUD*IST Vivo (Nvivo) software package was used for data management. Accordingly, themes that were important to the participants were drawn from the interview transcripts are presented in the findings section. Using NVivo, transcripts were coded according to themes, and analysed using a constant comparison approach (Glaser, 1992). The data were coded by paragraph and sentence as proposed by Strauss and Corbin (1990), and the entire document viewed to see if (and how) it differed from the previous transcript.

The second phase of the analysis was a statistical analysis of the data. Following the analysis of the interview data, data analysis was performed in order to assess the statistical significance of the determinants of the TPS. While the sample size is very small, given the scant research that has been conducted so far in the area of TPS and entrepreneurs, this still gives us some useful insights into the phenomenon. Table A1 shows pairwise correlations across a range of variables of interest. There are a number of interesting statistically significant correlations

related to TPS. First, there is a significant positive correlation between having heard of TPS and having an entrepreneurial extended family, which may be an indication of the extended family having experienced TPS. Second, an entrepreneur in our sample is less likely to have experienced TPS, the higher the annual sales of the business. Finally, there is a highly significant positive relationship between reporting having experienced TPS and believing that some people are envious of them as an entrepreneur.

Discussion of findings

Table 2 indicates that all but one of the entrepreneurs in this study believed TPS existed. The latter part of Table 2 indicates that around 30% of entrepreneurs were affected by TPS in a number of different ways. This table also indicates those who did not believe they were affected by TPS.

Table 2 – Example quotations of participants’ awareness of TPS and how it affected them

<p>Aware of TPS 24 (92%)</p>	<ul style="list-style-type: none"> - But I know it does exist in New Zealand but I don’t think I’m at that level – participant 2. - The tall poppy syndrome does [exist] and it’s a shame because the knocking is not warranted – participant 4. - its our culture. You’ve only got to look at the Black Caps how we sort of crucified them because they ... Australia and now they’re way up there again. People don’t give people a fair chance at times – participant 16. - So there is a jealousy. If you ask about entrepreneurs and jealousy, yes, you go out and flaunt it, there’s jealousy but the jealousy is ah, he’s taken a cropper and it was his own damn fault...I do think that if you do get high profile, there is the other thing that people like to see you taken down a bit – participant 7. - The more successful people you’ve got the more money there is out there but we have an absolute bad attitude, you know oh yeah rich bastard – participant 19. - I think we’re too quick to criticize our sports people. I think we’re too quick to actually idolize our sports people – participant 25.
<p>Affected by TPS (30%)</p>	<ul style="list-style-type: none"> - People can be very bloody nasty...they threw blocks, bricks through their bloody car windows when they parked at night participant 9. - Yes you do, there is a perception to someone when you say you own your own business that you’re a multi millionaire – participant 21 - I think they’re all proud of what I’ve managed to achieve and...there’s been the occasional resentment but that may be against the IT industry rather than specific – participant 4. - Not particularly I don’t think, not the people that I mix with I suppose. I guess when you get, if you’ve got a disgruntled employee, we might have one here at the moment, instead he’s thinking well it’s all right for you, you can afford to go and do that but I can’t – participant 2. - Yeah I manage it so far and I get to a certain point then I think, stuff them, they can think what they like – participant 11. - In the early stages very definitely people that used to work for me at [company name] and some of them, very covert approach to it, there was never any animosity or anything like that but the sort of thing was that [name] gone out and started a business and making squillions of dollars – participant 13.

	<ul style="list-style-type: none"> - All sorts of people say it. It's amazing – participant 19 - As soon as you drive up to a client in a flash car they go oh your making too much money and charging too much. I'm entitled to make a living that's why I work – participant 19.
<p>Not affected by TPS (70%)</p>	<ul style="list-style-type: none"> - Quite honestly I can't say that occupies my thought process at all – participant 17. - No, I've consciously tried to avoid that – participant 8. - Not at the moment. It's really the opposite at the moment for us because we're young and we're working hard and I'm attached to this blimmin thing and it goes off and I'll be sitting there at coffee group and you know they almost feel sorry for me – participant 10.

Table 3 shows the differences in characteristics of entrepreneurs who report having experienced TPS and those who have never experienced TPS.

Table 3: Differences in characteristics depending on personal experience of TPS

	No personal experience of TPS		Personal experience of TPS		Δ
	Mean	St. Dev.	Mean	St. Dev.	
Business characteristics					
Number of FTE employees	18	31	6	4	
Age of business in years	16	3	15	2	
First time business owner? (1=yes)	0.50	0.52	0.43	0.53	
Annual sales in thousands of \$s	2900	1721	1479	1440	*
Personal characteristics					
Sex (1=male)	0.88	0.33	0.86	0.38	
Number of children	2.41	1.00	2.00	1.41	
Number of siblings	2.41	1.97	3.29	1.50	
Did you have a partner when you started this business? (1=yes)	0.88	0.34	0.57	0.53	
Number of brothers	1.19	1.22	1.86	1.21	
Number of sisters	1.25	1.69	1.43	0.98	
Does anyone else in extended family own a business? (1=yes)	0.65	0.49	0.57	0.53	
Do you think some people are envious of you as an entrepreneur? (1=yes)	0.06	0.24	0.71	0.49	***

Note: Δ shows the statistical significance in means where *** denotes statistical significance at 1% level, ** denotes significance at 5% level and * denotes significance at 10% level.

Although there are many interesting differences in the characteristics of these two groups, only two differences are statistically significant. 71% of those with personal experience of TPS think people envy them while only 6% of entrepreneurs who have no personal experience of TPS believe others envy them. The other significant difference in mean characteristics is regarding annual sales with those with no personal experience of TPS having significantly higher annual sales. It would be interesting to examine whether these characteristics are causal, for example, whether the characteristics of the entrepreneur's personality have a direct causal effect on their success as entrepreneurs.

Mitigating factors

As the literature review indicated, the extent to which high achievers experience TPS may be dependent on a range of factors. In the current study, four potential mitigating factors were identified by the participants. These can be divided into two distinct groupings – individual factors and factors which are at a wider national culture or societal level. First, personality affected TPS, as participant 1 notes:

So it depends on the personality I think - participant 1.

Other mitigating factors are referred to in Figure 1 as being cultural or societal and are therefore less able to be impacted upon by entrepreneurs. These were the social class of detractors, geographic location and the small size of New Zealand's population. While this study did not focus on the entrepreneurs' detractors, some participants noted their detractors appeared to be of a lower class and did not to give the entrepreneur credit for their efforts in starting and running a business:

Unfortunately it's the way that New Zealand is going is – the lower class, middle and upper...the ones at the bottom [class] always say “they're [entrepreneurs] lucky, they're lucky” – participant 11.

Differences in how entrepreneurs are perceived also appear to be related to location (which may also be closely related to social class). One participant explains his experience of various locations within Auckland:

The difference [locations] you know in attitude between the people were massive... they're really trying to pick apart...why should you be able to be successful as opposed to me? Is it because you had a wealthy upbringing or something like that? - participant 6.

Entrepreneurs in alternative locations may have a limited experience of TPS whereby people embrace entrepreneurs and their new ideas. One example from Queenstown follows:

There's a lot more people starting their own businesses and so rather than being a tall poppy syndrome, there's a lot more people going, patting you on the back and 'going good luck, hope it works'. They're often there to help you out, give me a call – always been the approach here – participant 18.

This example shows that location can play an important part in the degree to which TPS is experienced by entrepreneurs. Indeed, on a broader scale, New Zealand may be affected more by TPS due to our size. Participant 15 explains:

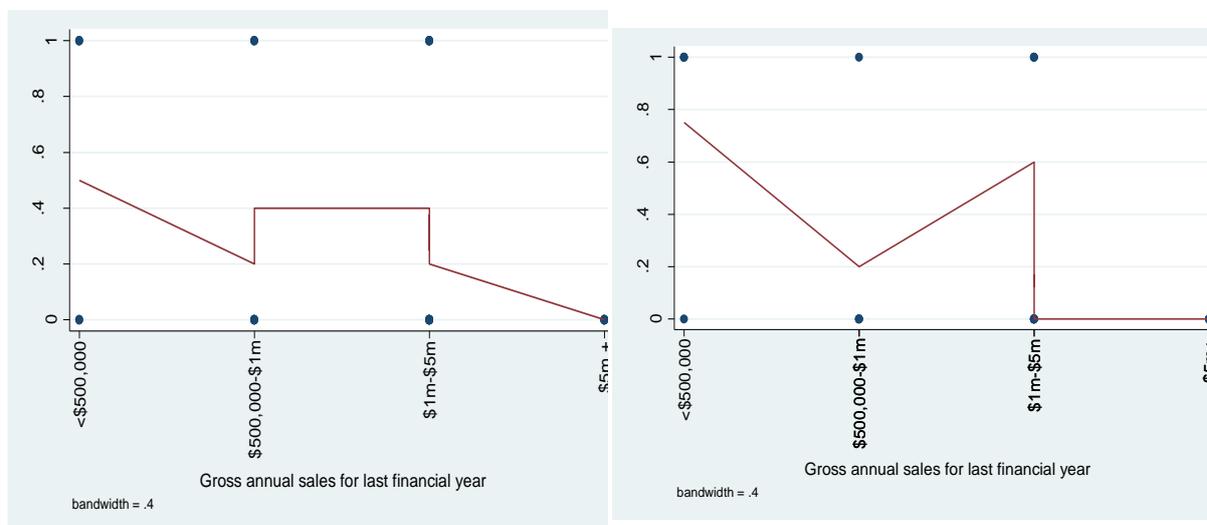
It's something to do with our small size – participant 15

As can be seen from the discussion in this section, a number of participants described a number of mitigating factors which appeared to vary the effects of TPS on entrepreneurs. Individual factors revolved around personality of the entrepreneur. Personality of the tall poppy has been found to be important in earlier research (Feather et al., 1991) and in this study it appeared to be a mitigating factor in the effects of TPS. Factors that are external to the entrepreneur were social class, location and the size of the country. These factors are societal/cultural and entrepreneurs were therefore less able to influence.

Further investigation of our data using statistical methods uncovers some additional factors which may influence the experience of TPS. A look at the determinants of thinking someone is envious of the entrepreneurs' success reveals a significant relationship between envy with their family's involvement in the business as well as their level of education. Fisher's exact test (p-value=0.046) reveals that more highly educated entrepreneurs have less belief that others envy their success when compared to less educated entrepreneurs. The entrepreneurs are also more likely to believe that others envy them (p-value=0.067), that TPS exists (p-value=0.061) and that they have personally experienced TPS (p-value=0.048) when they have family members doing paid work for the business.

Figure 1 shows the relationship between entrepreneur's personal experience of envy/TPS and gross annual sales. Highest levels of envy by others are experienced by entrepreneurs earning the least in gross annual sales whereas those earning \$5 million or more in gross annual sales report no feelings of envy by others. There is an interesting plateau of higher levels of feeling envied for those with gross annual sales between \$500,000 to \$5 million. The feeling of being envied by others is closely reflected in the personal reports of having experienced TPS, specifically TPS appears to be most prevalent amongst the lowest grossing entrepreneurs as well as those earning between 1-5 million dollars annually.

Figure 1: Lowess smoothing of Personal Experience of Envy/TPS and Gross Annual Sales.



Further and more comprehensive statistical analysis would benefit from larger sample sizes, however, the current analysis points to some interesting and statistically significant relationships between the personal experience of envy/TPS and both personal and business characteristics.

Strategies for entrepreneurs to reduce impact of TPS

This study found entrepreneurs experienced TPS and had developed various strategies for managing its effects including treating staff well, working hard, not displaying their wealth in an overt fashion and being relatively secretive about their role in the business. These strategies appeared to be useful in managing TPS to be merely an annoyance rather than something that affected entrepreneur's lives in a significant way. These strategies were within the control of the entrepreneur and showed parallels with prior research. First, entrepreneurs worked hard and treated staff well. They talked of leading by example and incidences of team leadership were evident in some of the accounts from participants, corroborating results of a prior study

of managers (Trevor-Roberts et al., 2003). In one of the main strategies for reducing the impact of TPS, participants aimed to show their employees how hard they worked and this may have reduced the level of TPS. Other researchers have shown that hard work and determination (Peeters, 2004) as well as ability and effort (Feather et al., 1991) may contribute to tall poppies suffering fewer effects of TPS. An important finding in the current study was that some entrepreneurs made concerted attempts to get their staff to relate to them by working alongside them in the business. This is important as previous studies found business leaders and politicians difficult to relate to (and may experience greater levels of TPS) (Peeters, 2004). However, it is unclear how people outside of the business view the entrepreneur, as an earlier study of TPS in entrepreneurs found the main detractors tended to be acquaintances and friends who were not involved in the company (Kirkwood, 2007).

The second strategy entrepreneurs engaged in was being secretive about their business ownership. This finding corroborates earlier research on entrepreneurs (Kirkwood, 2007). This is an interesting finding in a country which is considered to be highly entrepreneurial. However, this may be related a lack of recognition by others of what entrepreneurship involves, and this has been found in a prior study of entrepreneurs and TPS (Kirkwood, 2007).

The third strategy for managing TPS was that some entrepreneurs' deliberately limited their demonstration of wealth. This findings bears a strong similarity to an earlier study of entrepreneurs and TPS which found 'staying under the radar' and not 'flaunting' their wealth to be strategies for limiting TPS (Kirkwood, 2007). This mirrors previous research in Australia that found quiet achievers experience fewer effects of TPS than those who display egotism and self-interest (Feather et al., 1991).

Conclusion

This study concludes that TPS does exist for entrepreneurs and affects entrepreneurs in various ways depending on factors such as age, sales, gender and education. However, entrepreneurs have developed a number of successful ways of managing the effects of TPS.

However, the finding that some entrepreneurs were affected by TSP is not necessarily problematic. First, it affected less than one-third of the entrepreneurs in the study. Second, of those who were affected, they have developed a number of successful ways of managing the effects of TPS. This leads the authors to conclude that TPS is more of an annoyance than a serious impediment to entrepreneurs and its significance may be marginal. In fact, entrepreneurs in this study appeared to be accepting of the existence of TPS and did their utmost to avoid its influence. We found that the size of the business in terms of annual sales may be significant. Our results indicate that there may be a 'sweet spot' where TPS has little impact, and this is when the businesses annual sales are in the \$500,000 - 1 million sales mark. Thus, those entrepreneurs whose businesses are smaller than this and those that are over \$1 million but less than \$5 million in annual sales tend to experience TPS more. This may concur with Kirkwood's (2007) conclusions that TPS may have significant implications for entrepreneurship with respect to the desire to grow their business if the owners of these larger businesses are more impacted by TPS.

More research is necessary on all aspects of TPS, but in relation to entrepreneurs, some suggestions follow as to research directions. Research involving cross-country comparisons would help to address the question of how specific TPS is to New Zealand entrepreneurs, and a country that may provide a useful benchmark would be the United States. It would also be useful to compare entrepreneurs with other professions such as managers' experience of TPS. Prior studies on TPS tend to focus on hypothetical examples of high achievers 'falling'. This study focused on tall poppies who had not fallen so it was not the objective to focus on what

caused their fall, as previous studies have (Feather et al., 1991). Further research on fallen tall poppies may add important insights into the field. This study did not focus on detractors and therefore cannot make any conclusions about their background. However, some participants in the study noted that they found social class and location to be a factor in the degree of TPS they experienced. This may offer some support Feather's (1989) findings, where negative attitudes were found primarily in people who rated low on self-esteem, were less concerned with achievement and social power, and were politically more left-wing. Further research on entrepreneurs' detractors would assist in developing this observation.

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Appendix

Table A1: Correlations of main variables of interest

	Number of FTE employees	Age of business in years	First time business owner? (1=yes)	Number of prior businesses	Annual sales in thousands of \$s	Does anyone else in extended family own a business? (1=yes)	Do you think some people are envious of you as an entrepreneur? (1=yes)	Have you heard of TPS? (1=yes)	Does TPS exist for entrepreneurs? (1=yes)	Have you ever experienced TPS? (1=yes)
Number of FTE employees	1.00									
Age of business in years	0.05	1.00								
First time business owner? (1=yes)	0.15	-0.01	1.00							
Number of prior businesses	-0.16	-0.14	-0.82***	1.00						
Annual sales in thousands of \$s	0.49**	0.00	0.09	-0.11	1.00					
Does anyone else in extended family own a business? (1=yes)	0.08	0.10	0.12	-0.28	-0.20	1.00				
Do you think some people are envious of you as an entrepreneur? (1=yes)	-0.18	-0.01	-0.04	0.08	-0.32	-0.09	1.00			
Have you heard of TPS? (1=yes)	0.03	0.21	0.19	0.02	-0.27	0.39*	0.18	1.00		
Does TPS exist for entrepreneurs? (1=yes)	0.22	0.11	-0.18	0.05	0.18	-0.06	0.31	-0.10	1.00	
Have you ever experienced TPS? (1=yes)	-0.21	-0.19	-0.07	0.08	-0.38*	-0.07	0.69***	-0.14	0.33	1.00

Note: *** denotes statistical significance at 1% level, ** denotes significance at 5% level and * denotes significance at 10% level

Family Ownership, Multiunit Franchising Strategies, And Performance

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Abstract

This study examines how family businesses expand their franchise networks using a panel consisting of 574 to 662 quarterly observations of U.S.-based franchising brands over the period 2004 to 2012. We contrast the traditional agency reasoning for how to build franchise networks with single-unit franchising to argue that family ownership prefers a stewardship approach and a multiunit franchising strategy when they expand their chains. We further suggest that the willingness to pursue a multiunit strategy is significantly stronger when the markets targeted by the franchisor are characterized by greater distance or heterogeneity vis-à-vis home markets. Finally, we suggest this multiunit franchising strategy approach is more effective for performance. We find support for each of our claims and make a case for the applicability of stewardship theory in the franchising context and for family-owned firms. We demonstrate empirically that our conjectures hold in a multi-year, multi-industry, multi-firm data set.

Keywords: Family ownership, Franchising, Multiunit franchising strategy, Stewardship theory

Introduction

The popularity of franchising has risen steadily over the past decades (Dant et al., 2011), and as a business model demonstrates tremendous growth in several industries in the U.S. and globally. U.S. entrepreneurs in service industries alone opened more than 16,000 new outlets around the world in 2013 (Entrepreneur.com). In franchising, the company (the franchisor) grants rights to a third party (the franchisee) to open new outlets under the franchisor's brand name in exchange for an upfront payment and ongoing royalties (Barthelemy, 2008). Because franchisees are responsible for all startup costs associated with establishing new outlets, the company's brand may expand quickly and efficiently (Perryman & Combs, 2012). As a result, franchising has gained popularity as an expansion strategy in the majority of service industries (Perryman & Combs, 2012).

Yet, the literature on franchising is still rather sparse, with rigorous research insufficient in several key areas. One of these areas is the intersection of family business and franchising research. Much like mainstream businesses (e.g., Astrachan & Shanker, 2003), substantial portions of franchising networks are controlled by families (Chirico et al., 2011). Yet, family firm research has only recently acknowledged this phenomenon. Indeed, major franchising players such as Aaron's, Panera Bread, and CKE Restaurants (the owner of Hardee's and Carl's Jr.) are family-controlled companies with pervasive international networks of franchisees. The extant literature, however, lacks studies examining the unique effects of the family context in the franchising context. As we demonstrate in the present paper, however, family involvement has profound implications for how franchising networks choose to expand.

Specifically, we investigate how family ownership influences the strategies the franchisor uses to grow networks of new partners. Do such strategies remain intact as the distance—comprised of cultural, administrative, geographic, and economic dimensions—between the franchisor's home base and the franchisees' locations grow? Furthermore, is the family-controlled franchisor's choice of expansion strategies positive for their performance?

Some scholars have drawn primarily on the agency framework to explain franchising. Specifically, they claim that multiunit franchising provides crucial benefits to the franchisor

in that it addresses agency problems such as single-unit franchisees' opportunistic behavior, information withholding, and adverse selection by more effectively aligning the multiunit franchisees' interests to the franchisors' (Dant & Gundlach, 1998; Kaufmann & Dant, 1999). This notion even led some researchers to argue that multiunit franchising may be detrimental to the company's growth and the franchisor's authority overall, because greater alignment provides multiunit franchisees with significant bargaining power (El Akremi et al., 2011; Kalnins & Lafontaine, 2004). Others have advocated that the use of multiunit strategies (Kaufmann & Dant, 1998) can be advantageous. To resolve the literature's contradictory recommendations about multiunit franchising, we draw on both agency and stewardship theory to highlight the role that the family influence plays. Using stewardship theory (Davis, Schoorman, & Donaldson, 1997; Donaldson, 1990; Donaldson & Davis, 1991), we argue that family ownership encourages franchisors choosing multiunit franchising strategies and that this choice is justified financially. In other words, not all franchisor–franchisee relationships are necessarily subject to agency problems; indeed, stewardship-based reasoning may provide equally valuable insights into structuring the franchising network.

The present study makes multiple contributions to the literature. First, we add to the continued discussion in the family firm literature that suggests that both agency and stewardship perspectives should be considered simultaneously (e.g., Verbeke & Kano, 2012, Lebreton-Miller, Miller & Lester, 2012). Second, we add to the franchising literature by reconciling inconsistent findings by expanding the theoretical foundations. Specifically, we integrate the stewardship literature (e.g., Davis, 1997) and focus on family firm influence, a previously neglected variable. Third, the present study adds to the body of family firm literature, which highlights the importance of family firm influence in decision making (Gedajlovic, Carney, Chrisman & Kellermanns, 2012). Indeed, although the literature is sparse, family firm research has started to recognize the importance of the family firms' specific motives in franchising decisions (Chirico et al., 2011). Lastly, we complement prior research on performance differences between family and nonfamily firms, which to date have not investigated such differences in franchise settings (Miller, Minichilli, & Corbetta, 2013, Anderson & Reeb, 2003).

This paper is organized as follows. The next section briefly outlines partner selection from the traditional agency perspective to shed light on ownership, franchise chain growth, and franchise partner selection strategies. We then develop hypotheses based on the stewardship view of partner selection strategies in the context of family ownership. Thereafter, we introduce our longitudinal data of quarterly observations of franchising brands, present the methodology, and document the analytical results. We conclude by discussing our results, as well as their implications for and contributions to theory and practice.

Background and Theory

Extant literature distinguishes between two main approaches to selecting franchisees (Perryman & Combs, 2012; Cox & Mason, 2009; Dant et al., 1997). When expanding their franchising networks, some franchisors assign new outlets to existing franchisees (thus choosing a multiunit franchising strategy in which a single franchisee may control a large number of outlets). Others, however, limit each franchisee to a single outlet (single-unit franchising). Typically, the agency perspective is evoked when describing the relationships between franchisors and their franchisees (Perryman & Combs, 2012; Combs & Ketchen, 2003). Agency theory assumes that people are individualistic and self-serving and act according to what they believe will provide them with the greatest utility. This can result in undesired consequences when one party (the principal) delegates tasks to another party (the

agent). If principals and agents strive to maximize their own interests, they often end up with different goals. In addition, each may have different attitudes toward risk, which results in divergent preferred actions (Eisenhardt, 1989). Agency theory focuses on correcting these differences by aligning the interests of the agent and the principal, mainly by reducing the power to behave opportunistically.

The agency perspective used to understand partner strategies in franchising provides an unambiguous view of how partners should be selected. It stresses that franchisees are self-motivated agents that may be opportunistic in pursuing own interests under the franchisor's brand, which may be difficult and costly for the franchisor (Sorenson & Sørensen, 2001). To limit franchisees' bargaining power and ultimately possibilities to behave opportunistically, the prudent strategy is to minimize the number of outlets each franchisee can control by implementing a single-unit franchising strategy (El Akremi et al., 2011). In the agency framework, a multiunit franchising strategy cannot be justified adequately, because it affronts predictions based on agency reasoning. Consequently, the agency perspective fails to explain why some franchisors opt for the single-unit strategy and others choose a multiunit approach. Building on Neubaum and Zahra's (2006) maxim that strategy reflects the company owners' idiosyncratic circumstances and preferences, we posit that the ownership structure of the franchisor firm is key to understanding why these differences in franchising strategy exist.

We can derive quite different implications for the franchising strategy if we consider another framework, one often used as the counterpart to agency-based reasoning with respect to designing and dealing with governance systems: the stewardship theory. Both the agency and stewardship theories focus on the separation of and relationship between management and stakeholders, and each outlines different options for enhancing organizational effectiveness. Although both theories present routes to ensure that management works effectively, each is based on different assumptions about human behavior and motivation, which results in different implications for management practice.

Unlike agency theory, stewardship theory is concerned more with trust and cooperation. It assumes that people sometimes perceive the benefits derived from collective action is greater than that gained from individualistic, self-serving behavior (Davis et al., 1997). The potential problems in agent relationships are absent in the presence of steward relationships; therefore, there is neither a great need for monitoring nor special emphasis on incentive structures to reduce power and potential opportunism. Stewardship relationships focus instead on empowerment and structures that facilitate effective collective action (Davis et al., 1997). By acting in the best interests of the organization, stewards are motivated intrinsically to make effective decisions, which may result in opportunities that facilitate or enhance growth and better outcomes than those resulting from self-serving behavior. In the franchising context, this enables the franchisor to justify using multiunit strategies and allows stewards to own several franchising units. Stewardship theorists may argue that this would be potentially a more effective way to stimulate empowerment and cooperation when growing the franchise chain.

Stewardship conditions are likely to be observed when the franchising network is controlled by—or is subject to significant impact from—the original owners and their families. Unlike hired managers, family owners tend to rely on close ties and relationships in business operations (Donaldson & Davis, 1991; Hernandez, 2007). As we argue in our conceptual development, family-controlled franchising systems are much more likely to rely on trust and embeddedness when building their relationships with franchisees. This implies they are prone to developing close ties with a limited number of franchisees that they trust to open multiple locations. In other words, rather than creating a diverse system of single-unit

franchisees, family owners will trust new outlets to proven, existing franchisees with which they have relationships. This creates multiunit franchisees. Such reliance on close relationships, we suggest, is going to be particularly prominent when new units are opened in markets that are sufficiently distant from the home market of the initial owner. Market heterogeneity decreases the amount of information the franchisor has about a given region and enhances adverse selection and monitoring issues (Perryman & Combs, 2012). Driven by stewardship, family firms will tend to rely even more on existing franchisees that have an established track record.

In the context of franchising, agency and stewardship theories offer divergent prescriptions for how franchisors should select partners when growing the franchise network. According to agency theory, franchisors should strive to align franchisees' interests with their own through monitoring and reducing power. When franchisee interests are aligned, higher performance is expected. Jensen and Meckling (1976) suggested that aligning incentives is the most effective mechanism. In contrast, stewardship theory posits that substantial efforts to reduce opportunism—and strategies that force incentive alignment—are at best ineffective and potentially counterproductive because they mitigate the stewards' motivation to do the right thing (Wasserman, 2006). The better strategy under stewardship reasoning is to support a highly involved orientation through extensive cooperation.

In the present study, we posit and test an alternative theoretical model to suggest that family-controlled firms are more likely to establish multiunit franchising strategies. This is especially relevant in a global context, in which the difference between the home and host countries is vast. In contrast to the mainstream view that franchising is dominated by agency reasoning, our framework suggests that certain contingencies make family-controlled franchisors more likely to operate consistently with stewardship.

Hypothesis Development

Family control and partner strategy in franchising

Although family firms have been shown to bear agency cost (Schulze et al., 2001) and family members can behave as agents (Chrisman et al., 2007), the overall agency costs in family firms tend to be lower than in nonfamily firms (Chrisman, et al., 2004). One of the differences in agency costs can be attributed to the fact that family firms are often behaving consistent with stewardship behavior (Eddleston & Kellermanns, 2007). For example, family firms are often characterized by reciprocal altruism, trust, and high levels of commitment (Eddleston & Kellermanns, 2007; Davis, Allen, & Hayes, 2010). These qualities result in highly motivated employees (Davis et al., 1997) and pro-organizational behavior in family businesses (Eddleston & Kellermanns, 2007).

To this background, we expect that family ownership can influence partner strategy when growing a franchise chain. Consistent with the stewardship perspective (Davis et al., 1997; Ouchi, 1979), family-controlled firms are built on less formal, highly personal relationships, and the decision makers are more prone to trust-building and socializing to ensure commitment. In the context of franchising, this means that franchisors are likely to spend time developing personal relationships with their franchisees, building trust and establishing commitment. This leaves more room to empower the franchisees, who will then more likely opt for stewardship behavior (Donaldson & Davis, 1991). This makes it rational to follow a multiunit strategy when expanding the franchising chain—to trust a few empowered partners rather than trying to reduce bargaining power by minimizing the number of outlets each franchisee controls.

In a typical franchising arrangement, relationships are arms-length, franchisees are more anonymous, the culture is more professional and impersonal, franchisees are independent from the franchisor, and the likelihood of information asymmetry and detachment is increased (Dant et al., 2013). All of these qualities encourage agency- and not stewardship-consistent behavior. Hence, typical nonfamily-controlled franchisors may find the single-unit strategy relevant for minimizing agency costs (see e.g., Woodbine & Taylor, 2006) and curb franchisees' tendency to act opportunistically (Eisenhardt, 1989).

In contrast, family-controlled franchisors encourage embeddedness and close ties, invest time and resources into empowering a tighter group of trusted partners, and readily step aside to let such franchisees proactively develop strategies that benefit the entire network. Those strategies are then spread throughout the network by letting franchisees control multiple outlets. In other words, family-controlled franchising systems are more likely to go for a multiunit franchising option. Consequently, we hypothesize:

Hypothesis 1: Family-controlled franchising chains are more likely to rely on the use of multiunit franchising strategy.

Family control, franchisor–franchisee distance, and partner strategy

Because family-controlled firms employ embeddedness and engagement-related mechanisms to deal with issues that may be seen as the purview of the agency problem, franchisors may be more likely to use stewardship-based strategies when typical franchisor–franchisee issues are likely to be exacerbated. One such condition, we suggest, is the presence of a substantial distance between the franchisor's headquarters and the location of its franchisees (Ghemawat, 2007; Kalnins & Lafontaine, 2004; Perryman & Combs, 2012; Kretinin et al., 2014). This is particularly relevant when a substantial portion of franchised outlets are located outside the franchisor's home country.

Aside from their general inclination to use relational strategies, franchisors find it easier and more effective to develop a multiunit model, because it significantly decreases monitoring costs (Perryman & Combs, 2012; Combs et al., 2011). In addition, franchisors find it more complicated and challenging to use agency tools to impose control mechanisms with more between the home and host markets (Sorenson & Sørensen, 2001), because distance is multidimensional in that it comprises cultural, administrative, geographic, and economic dimensions. Cultural and economic factors such as religion, per-capita income, internet penetration, human development indicators, and so on force service providers to deviate from their home market models to adapt to the host country conditions. Because the interests of multiunit franchisees are aligned more effectively with the franchisor (Kaufmann & Dant, 1998; Perryman & Combs, 2012), the adaptation process will not be opportunistic with respect to the franchisor. This means that using single-unit strategies to reduce individual partners' potential power vis-à-vis the franchisor will be costly and bothersome due to the need for customized contracts and other monitoring devices (Perryman & Combs, 2012). Embeddedness and cooperation are much more effective in these conditions (Davis et al., 1997). As such, we expect cooperative models to be more effective (Ouchi, 1979), which in turn makes stewardship behavior more likely and preferable as an easy and effective approach (see e.g. Sundaramurthy & Lewis, 2003). Accordingly, family-controlled businesses will be even more likely to use multiunit strategies for selecting partners when distance is high. Formally,

Hypothesis 2: Franchisor–franchisees’ distance positively moderates the relationship between family control and using a multiunit franchising strategy. Specifically, family-controlled businesses will more strongly engage in multiunit strategies when franchisor–franchisee distance is high.

Multiunit franchising strategy and performance

We suggest that the multiunit franchising strategy is consistent with the stewardship-driven relationship between the franchisor and franchisees, which is likely to develop when franchising chains are family controlled. This arrangement reduces difficulties associated with ownership and control (which Jensen and Meckling [1976] identified as being the main causes of agency costs), and thus minimizes the need to continually invest in solving agency problems. The multiunit franchising strategy, in which a few franchisees own many units, may be more effective from a performance perspective for family controlled networks. Besides minimizing the presence of agency problems and role ambiguities that result from shared power (see e.g., Donaldson, 1990), such multiunit partner strategies encourage franchisees’ stewardship behavior, which diminishes the need for expensive monitoring and using tools designed to mitigate agency costs. Using a multiunit franchising strategy is likely to engender a collectively held vision for the franchising chain that inherently aligns the franchisees’ motives with those of the franchisors (see Kroll, Walters, & Son, 2007; Griinhagen & Mittelstaedt, 2005). New outlets should perform better under the multiunit franchisee’s control compared to single-unit owners, because no information is withheld from the new outlets (Dant & Nasr, 1998). Furthermore, franchisees with many units and a potential to expand in the franchising network are likely to have a long-term focus and more or less automatically score high on parameters such as value commitment and franchising identity. All of these are proposed as parts of the underlying mechanisms that create steward relationships and higher performance once they are present (Kalnins & Lafontaine, 2004; Davis et al., 1997). In this situation, monitoring devices and monetary incentives aiming to ensure pro-organization behaviors are less important, empowerment is present, and the franchising arrangement appears more effective. Stated formally:

Hypothesis 3: Using a multiunit franchising strategy is positively associated with the franchisor’s performance.

Methods

Sample

The U.S. franchising industry is highly concentrated, with more than 98% of the market capitalization of all public companies engaged in franchising controlled by just 50 franchisors (Francorp, 2014).⁵⁸ To build the database for the present study, we collected information on 82 franchised brands controlled by public corporations from secondary sources. This allowed us to cover a substantial share of the franchising landscape. Combined annual sales of the corporations in our dataset exceeded \$87.9 billion dollars, and many corporations controlled multiple brands. Industries in which franchisors were particularly active included hotels and motels, restaurants and drinking places, bakery products, equipment rental and leasing, and motor vehicle parts and supplies.

⁵⁸ Up to 25% of the franchising industry in terms of sales is accounted for by just one company: McDonald’s Corp. For this reason, it is customary in the franchising research to exclude it as an outlier (Franchise Information Services, Inc., 2014). We follow the same convention in the present study.

Specifically, the population of firms studied for the present paper is comprised of public franchising chains headquartered in the U.S. that may or may not have extensive global operations. Franchising industry dynamics are rather volatile, with substantial changes occurring on a quarterly basis (Rosenberg International Franchise Center, 2014). For this reason, we constructed the dataset on a quarterly basis rather than an annual basis. Much like extant research (see e.g., Kretinin et al., 2014), we were faced with a rather high incidence of missing data, because franchisors are not required by law to report systematically on several variables of interest. Thus, not all brands were observed in all quarters. In terms of sales, 49.17% of the brands in the full sample had no missing values such that they could be included in our analyses. The aggregated sales of the franchisors used to test our hypotheses exceeded \$43.232 billion dollars.

The dataset covers publicly held franchised brands ($N = 662$) over the course of 2004 to 2012. The dataset was compiled from several secondary data sources. Specifically, franchising information, including information on the franchising system's structure and strategy (multiunit vs. single unit) was obtained from the franchisors' published annual reports. Information about the governance structure of franchisors, including the extent to which they are family-controlled, was obtained from the proxy statements. Financial data were compiled from COMPUSTAT. This data set contained both family and nonfamily firms that operate with different degrees of internationalization and as such could serve as a basis for generalizable inference.

Measures

Dependent variables. The dependent variable for Hypotheses 1 and 2 was the franchisor's reliance on the multiunit franchising strategy. Following extant research (Castrogiovanni et al., 2006; Kretinin et al., 2014), we measured it as a ratio of franchised outlets divided by the number of franchisees. The information required us to calculate this measure was sourced from the franchisor's annual reports. A linear change pattern was assumed across quarters. A close examination of the data did not reveal particularly significant spikes in the number of outlets per franchisee from year to year for most brands in the dataset.

To investigate Hypothesis 3, we employed net income as a proxy for the franchisor's performance (see e.g., Peris-Ortiz et al., 2012). Using net income to reflect the efficiency of the franchisor's operations was calculated by subtracting all the costs from the company's revenue. Quarterly indicators of performance were obtained directly from COMPUSTAT with appropriate allocations between the brands made where necessary according to the franchisor's reports.

Independent and Moderator Variables

To operationalize family control, we scrutinized information available through the proxy statements. Specifically, following prior research (King & Peng, 2013), two conditions were identified as key to classifying franchisors as family-controlled. First, the initial founder had to be present on the board of directors. This was important because firms are often seen as an extension of the founder's persona, with the founder's characteristics affecting most processes and decisions at the firm level (Boeker & Wiltbank, 2005; Boeker, 1988; Schein, 1983). Second, to ensure that the original founder was not simply a figurehead kept on the board to signal a message to external constituencies, we checked if at least one other relative of the original entrepreneur had a voting board seat. Franchisors that met both these requirements were assumed to be operating under substantial family control in line with the extant literature (e.g., King & Peng, 2013).

The franchisor–franchisee distance was captured with the help of the so-called CAGE Distance (Ghemawat, 2007a). As a continuous variable, this transforms the cultural, administrative, geographic, and economic (CAGE) distances between the host and home countries into a unified composite distance score. The cultural component represents the differences in language and religion. Economic distance captures differences in gross domestic product, the human development index, and internet penetration. The administrative dimension represents countries' affiliations with trade blocks and takes stock of various bureaucratic procedures. Finally, geographic distance is measured in kilometers between the capitals (Ghemawat, 2007b). In theory, the CAGE distance may vary from a low of zero, when all franchised outlets are located in one country only (that is, in the U.S.) to a very high number if a substantial number of franchised outlets are located in highly diverse and distant countries. A brand-average distance score was calculated using a weighted average of the distance between the home market and all the foreign markets in which the focal franchisor had operations. We use this composite score to highlight the degree to which the company's home market (in the U.S.) differs from the host markets in which it operates. This measure has been used widely in prior research (Ghemawat, 2001; Ghemawat, 2007); as such, it can be regarded as a reliable indicator of distance.

Control variables

Because the franchisor's performance could be subject to influence from variables other than the independent variables used to test our hypotheses, we included several key controls that were previously found to influence performance, particularly variables used in the franchising literature. To account for the company's size and exposure to the market knowledge, we controlled for the number of company-owned outlets, the number of countries in which the company operates, and the company's age measured as the number of years since the company was founded (Gomez et al., 2010; Shane, 1996; El Akremi et al., 2010; Baena & Cervino, 2012; Kretinin et al., 2014). We also controlled for royalty rates (*Royalty*), because they may bear on the company's performance and may affect the franchisor's attractiveness to new franchisees (Elango, 2007). Finally, company-level fixed effects were also included.

To minimize potential problems with nonessential ill-conditioning and to ensure that the coefficients were scaled to provide easy interpretability, all predictor variables were standardized (Marquardt, 1980)

Estimation and results

We used linear regression model with nonparametric Driscoll–Kraay heteroscedasticity-consistent standard errors, which are robust to cross-sectional and temporal dependence. This allowed us to model the fourth-order autoregression to specify the time lags correctly given that our data are of a quarterly, not annual, nature (Driscoll & Kraay, 1998; Liu & Wezel, 2014). Correlations in our models do not exceed the 0.6 threshold as indicated in Table 1. Overall, we report four different models to test our hypotheses. The control model (Model 0) includes only control variables and serves as a basis for comparison for the more sophisticated models that test the predicted relationships. Model 1 tests Hypothesis 1 and includes the effect of family control on the franchisor's reliance on multiunit franchising strategy. It provides clear, strong, and unambiguous support for this Hypothesis 1 ($\beta=0.34$, $p<0.01$). As predicted, family-controlled firms tend to use multiunit franchising practices more intensively than nonfamily-controlled firms. Moreover, ΔR^2 between the control model and Model 1 is 0.12, which means that family control by itself explains about 12% of variance in the franchisor's use of the multiunit franchising strategy. Hypothesis 2 predicted

that larger differences between the company's home and host markets will motivate family firms to rely more heavily on the multiunit franchising strategy. Model 2 indicates that the interaction between the family control and CAGE distance is positive and highly significant, thus providing support for Hypothesis 2 ($\beta=0.22$, $p<0.01$). Introducing the interaction term further increases the overall R^2 to 0.34. Finally, to test Hypothesis 3, in Model 3 we studied the impact of the multiunit franchising strategy on the franchisor's performance. According to our results, Hypothesis 3 is also supported ($\beta=1.32$, $p<0.05$).

Robustness Check

To strengthen our conclusions, we considered alternative models to test our hypotheses. We re-ran our models with the panel-corrected standard errors and obtained estimates similar to those reported here in terms of sign and significance.

In addition to these alternative estimations, we also performed exploratory analysis of the impact of the three-way interaction of multiunit franchising, CAGE distance, and family control on the franchisor's profits. Keeping our tested hypotheses in mind, we expected the three-way interaction to be positive and significant due to the positive effect of firms' being family run and their close ties with multiunit franchisees. Indeed, we found that the three-way interaction was positive and significant. This result indicates that family firms that rely on multiunit franchising under market heterogeneity perform better than nonfamily firms, especially when reliance on multiunit franchising is greater. The estimation results are available from the authors upon request.

Lastly, due to missing data, Model 3 in Table 2 with performance as the dependent variable has fewer observations than the models with multiunit franchising as our dependent variable. We choose to report the models with most of the data available, but we have also restricted the first two models to the 574 observations represented in Model 3. We observed no meaningful differences in the results.

Discussion

The academic literature on family businesses has not addressed franchising in detail—a notable shortcoming—because this phenomenon is increasingly popular among companies with high family ownership. Currently, a nontrivial number of family businesses participate in franchising networks (Chirico et al., 2011). We were motivated to research this phenomenon, specifically the relevance of using a multiunit franchising strategy and its performance implications. In contrast to prior theoretical discussions from the agency perspective (cf. Jensen & Meckling, 1976; Fama, 1980), we drew on the stewardship view (Davis, Schoorman, & Donaldson, 1997; Donaldson, 1990; Donaldson & Davis, 1991) and expected family-controlled businesses to rely more on using multiunit strategies for selecting partners, which we further believed was beneficial to firm performance. We have argued that the effects of high family ownership on using a multiunit strategy are strengthened by high franchisor–franchisee distance in culture, administration, geographic, and economic terms. This is also consistent with our findings. The results suggest that it is important to look at family ownership to determine whether a steward or agent relationship is likely to develop between franchisors and franchisees and, from this, to draw conclusions about the usefulness of multiunit strategies.

Given our findings, the present study offers insights into how family businesses act in franchising situations and whether their choices are effective from a performance perspective. Concurrently, the present research offers support for an approach using stewardship theories in an attempt to understand the effects of family ownership on performance. We have also

demonstrated how stewardship theory can be applied in franchising and used to explain franchisor–franchisee relationships.

The present study finds much support for the view that misaligned interests is not always a concern and that it is not always necessary to control behavior, as the traditional agency discusses in the franchising literature (Fama, 1980). In line with recent research (Dant et al., 2013), the present study provides evidence for the relationship approach. It shows, too, that cooperative models companies use with high family ownership can be effective and suitable. The present findings suggest that not all relationships among franchisors and franchisees are necessarily subject to severe agency problems. Instead, although use of single-unit strategies still is valuable and at times popular, we find that family businesses that evade agency behavior and instead favor steward behavior through multiunit franchising strategies report higher performance. This suggests that although agency problems are not necessarily absent, franchisors should consider that stewardship can explain network board dynamics in certain situations such as those in the family business context.

Franchising solutions are not uniform. As such, we can outline the possibility of taking a balanced view of franchising strategy for family business research, which suggests more caution in situations with a stewardship character. Consistent with previous family business research, the theoretical boundaries of agency and stewardship theories may provide interesting complements to one another. Indeed, the stewardship perspective seems to add an understanding of how family businesses operate in franchise contexts (see e.g., Chirico et al., 2011).

Limitations and Future Research

Like all studies, the present study has limitations. Specific types of franchise industries may demonstrate different relationships between family ownership, multiunit strategy, and performance. Although our dataset contains data from franchises in several industries, it is limited to public companies. Emerging franchising industries such as child centers or vending primarily consist of private firms. According Durand and Vargas (2003), private companies may deploy their resources differently than public companies. Finally, Elango (2007) and Dant et al. (2008) demonstrated that franchisors from different countries of origin may exhibit different growth patterns and structures due to the specificity of the political, cultural, and economic climates in their home markets. Moreover, although we have quite a long and longitudinal panel, we still have a limited timeframe, whereby the effects may differ from taking a longer historical perspective. For example, companies may attempt to redirect ownership patterns toward company-owned outlets, for example GNC Holdings, or the opposite condition, such as DineEquity, Inc. Although we controlled for companies' age and experience, which may help partial out some of the variance evident in outlet ownership patterns, we believe that caution is warranted in generalizing the results. Indeed, the magnitude of the effects may differ. This implies, however, that there is considerable potential to extend this research across different franchise chains.

Furthermore, our classification of family firms can be more fine-tuned for future research. Family firms have been found to be heterogeneous in nature (Westhead & Howarth, 2007), yet our limited sample size did not allow us to provide such a finer-grained picture. Accordingly, we encourage future research to specifically investigate differences in ownership, management involvement, and transgenerational succession intentions (e.g., Zellweger et al., 2012). Similarly, future research could distinguish between founder-led firms, “true” family firms, and nonfamily firms in their analysis (Miller et al. 2013).

The strong impact of family owners on companies' franchising strategy can also be approached from the personal perspective of the owners (Finkelstein & Hambrick, 1996; Hambrick & Mason, 1984). Individual characteristics of company's leaders such as experience, education, country of origin, and professional background play an important role in the company's decision-making. Given the specificity of the franchising model, future research should identify the specific impact of individual leaders on a company's franchising strategy, perhaps using upper echelon paradigm (Hambrick & Mason, 1984).

Conclusions

The present study's main contribution lies in introducing a stewardship perspective to examine how family ownership is important for understanding franchising partner strategies and the performance of franchise chains. The present study offers some interesting implications regarding the influence of family ownership, the use of multiunit franchising strategy, and performance. It also suggests a rationale for considering the use of agency reasoning in franchise research and considering how stewardship behaviors can be important for explaining the individual behaviors of certain franchisors. Research on family firms and franchising is still scarce and has not drawn much attention. Hence, by developing and empirically testing hypotheses that address this phenomenon, the present paper helps fill this notable gap in the literature. We acknowledge that more work may be needed before more definite conclusions are drawn. Thus, we encourage more studies in this area to provide a better foundational understanding among both researchers and practitioners.

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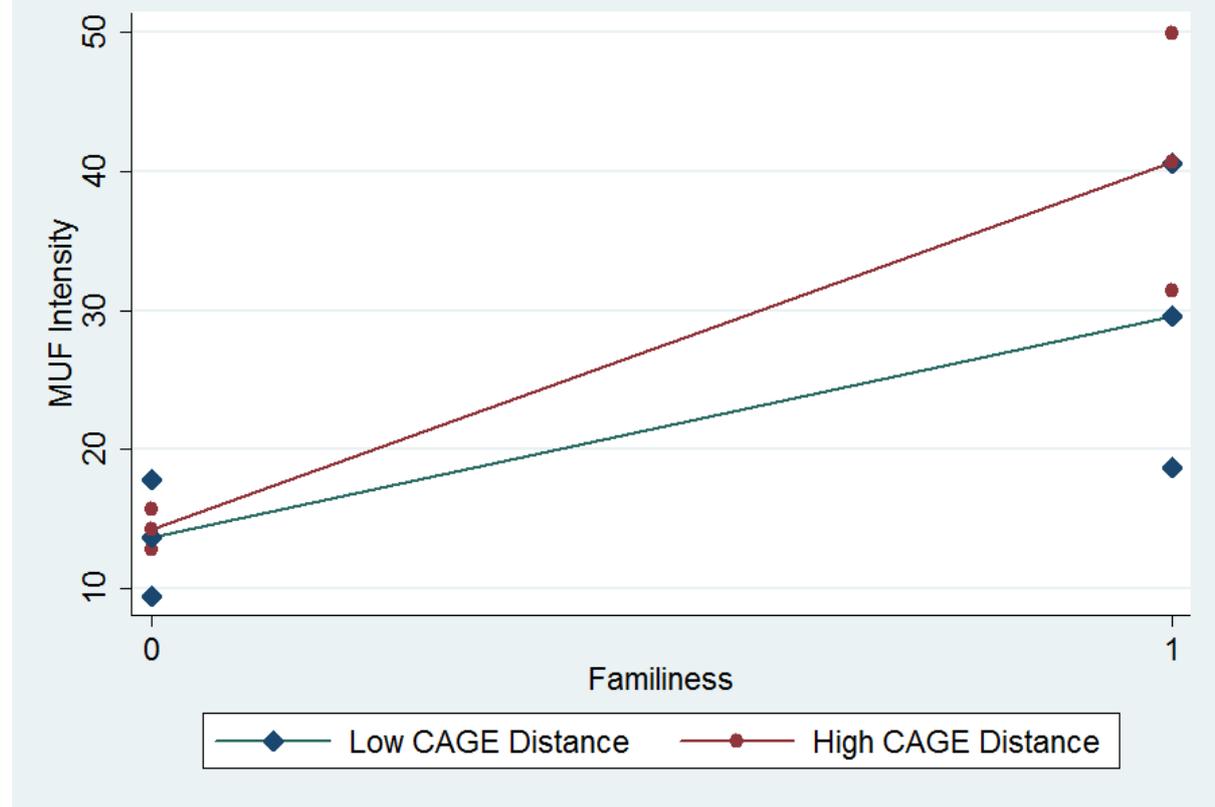
		Mean	St. Dev.	1	2	3	4	5	6	7	8
1	Net Income	14.12	28.22								
2	Ln(CO)	3.62	3.05	-0.35**							
3	Countries	17.91	28.02	0.05	0.42**						
4	Age	37.99	17.28	-0.14**	0.48**	0.47**					
5	International	0.93	0.24	0.07 [†]	-0.15**	0.16**	0.25**				
6	Royalty	0.04	0.01	-0.09*	0.55**	0.32**	0.24**	-0.24**			
7	Family Firm	0.13	0.34	0.05	0.39**	-0.15**	-0.04	-0.14**	0.27**		
8	CAGE	2412.56	2654.54	0.08*	-0.07*	0.41**	0.19**	0.26**	-0.14**	-0.05	
9	MUF	16.08	24.99	0.12**	-0.19**	-0.12**	-0.02	0.13**	-0.20**	-0.01	0.06

[†] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

	Control Model		Model 1		Model 2		Model 3	
Dependent Variable	MUF		MUF		MUF		Net Income	
	β	St.Err.	β	St.Err.	β	St.Err.	β	St.Err.
Ln(CO)	1.37**	0.20	1.76**	0.46	2.08**	0.487	-4.40	4.97
Countries	-0.29**	0.055	-1.72**	0.46	-2.36**	0.35	8.75 [†]	4.98

Age	0.20**	0.06	0.46**	0.12	0.54**	0.10	-0.59	0.46
International	-0.04**	0.01	-0.34**	0.07	-0.29**	0.06	0.60	0.82
Royalty	-0.07**	0.01	-0.56**	0.10	-0.36**	0.12	0.86	1.57
Fixed Effects	Included		Included		Included		Included	
Family Firm			0.34**	0.09	-0.02	0.08	3.49*	1.74
CAGE					0.31**	0.07	-2.26	1.53
Family Firm × CAGE					0.22**	0.07		
Net Income Lagged							2.76	1.70
MUF							1.32*	0.65
Intercept	-0.05	0.05	-0.68**	0.11	-0.85**	0.10	17.82**	1.90
R^2	0.17		0.29		0.34		0.24	
N	662		662		662		574	
† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$								

Fig. 1. The relationship between Familiness, CAGE Distance, and MUF Intensity



Social And Sustainable Entrepreneurship Activity Among Young Adults - A Global Perspective

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Social And Sustainable Entrepreneurship Activity Among Young Adults

A Global Perspective

Abstract

The role of social and sustainable enterprises have been highlighted by the recent recession. Unlike conventional enterprises, social and sustainable enterprises have been able to increase employment in social sector, although their role seems to remain undervalued. Simultaneously, youth employment has been increasing in developed economies. Young adults are said to be more entrepreneurial and their values are more towards social and sustainable entrepreneurship. The paper examines social and sustainable entrepreneurship among young adults, and provides evidence about entrepreneurial, social entrepreneurial, and innovation-driven entrepreneurial activity by analyzing GEM 2009 individual data. According to our results, the odds of a person being a social entrepreneur do not depend on age or education, although higher education level characterizes social entrepreneurs. Moreover, neither life cycle theory nor the generation subculture theory explain the social entrepreneurial activity among young adults.

1. Introduction

Entrepreneurship is considered to be a key to developing society, and contributing to economic growth (Bosma et al., 2011; Wennekers & Thurik, 1999; Acs, 2006). Also, entrepreneurship enhances sustainability, and social welfare through discovery and exploitation opportunities that result from market failures, which impact environment and society (Dean & McMullen, 2007). The academic interest towards entrepreneurship dates back two centuries, while the research on social and sustainable entrepreneurship is an up-and-coming fields of interest (Short et al., 2009). Despite acknowledging the role of entrepreneurs in enhancing social welfare, the process of discovery and exploitation of entrepreneurial opportunities, which are not appealing to existing markets, remains untapped (Hall et al. 2010). There is only limited empirical evidence regarding social and sustainable entrepreneurship, and the prior main contributions have focused on definitions (e.g. Shephard & Patzelt, 2010; Short et al. 2009), although recently the social entrepreneurship literature has been progressing further (Doherty et al., 2014). Social economy is considered as an important employer (6.5 percent from working population) in Europe, and it has a considerable role in recovery from recession (European Commission 2013b). Despite the increased employment in social sector during the recession and growth of youth employment in developed economies, the lack of familiarity with social enterprises is reflected in the traditional businesses' depreciation of youth's experience in social enterprises. Simultaneously, the need to generate more awareness about social enterprises among youth is recognized in the EU-level (European Commission 2013b; Kew et al. 2013). Moreover, different forms of entrepreneurship provide youth with alternative employment possibilities and motivate to start a business that corresponds to their values and beliefs. Prior entrepreneurship literature has limited evidence about youth entrepreneurship, as the research is still in its early stages. Additionally, local conditions have been proposed to impact youth entrepreneurial opportunities, thus research in multiple national contexts is needed. (Ellis & Williams, 2011)

The prior literature has tended to separate the two aspects of sustainable entrepreneurship into environmental and social entrepreneurship (Zahra et al., 2009). Although recently the social entrepreneurship research has focused on antecedents of social entrepreneurial process (Miller et al., 2012; Tsui, 2013), still more research regarding the antecedents of social entrepreneurship, and distinctive patterns of behavior and thinking of social entrepreneurs is

needed (Dacin et al, 2011; Weerawardena & Mort, 2006; Yiu et al., 2014). Despite the progress in the field of sustainable entrepreneurship, research is still thought to remain detached from the conventional entrepreneurship literature (Kuckertz & Wagner, 2010), and concerns regarding sustainable entrepreneurship as a concept have been voiced (Gibbs, 2009). Further research regarding the specific characteristics of social and sustainable entrepreneurs is needed to advance the two types of entrepreneurship as a field of research (Rajasekaran, 2013; Weerawardena & Mort, 2006). We address this gap of specific characteristics of social and sustainable entrepreneurs, and compare two theories explaining the entrepreneurial behavior among young adults. More specifically, we aim at contributing to the social and sustainable entrepreneurship literature by examining the social and sustainable entrepreneurial activity among young adults globally. Moreover, we provide support for using the broad definition of social entrepreneurship by showing that the whole social entrepreneurship spectrum (Lepoutre et al., 2013) can be found from developed countries.

2. Social and Sustainable Entrepreneurship

Entrepreneurship requires existence of both the individual and the discovery of an entrepreneurial opportunity. A key to a person's ability to look for and utilize an opportunity is specific, useful knowledge, and as a result of individual differences regarding possession of knowledge, some people are stimulated by entrepreneurial opportunities, while others seem to ignore them (Venkataraman, 1997). The prior literature has suggested two types of motivators for an individual to become an entrepreneur: pull (opportunity), and push (necessity) factors. Opportunity-driven entrepreneurship contains voluntary choice of becoming an entrepreneur as a career choice, whereas necessity-driven entrepreneurship is about choosing entrepreneurship as a career, because there are no other options to consider. (Reynolds et al., 2002, p. 16) Additionally, economic development has been found to increase opportunity-driven entrepreneurship, which, in turn has been shown to enhance national economic development more than necessity-driven entrepreneurship (Acs, 2006). An opportunity is also at the core of different types of entrepreneurship, including social and sustainable entrepreneurship.

Social entrepreneurship has been studied for 20 years, though recently it has gained increasing interest (Short et al. 2009). There are three main views on social entrepreneurship in the literature: the U.S., European and UK views. Each of these views has different nuances regarding what social enterprises are (Doherty et al. 2014), but still scholars seem to agree that a social mission and value creation are central features of social enterprises (Dacin et al., 2011; Dart, 2004). Zahra et al. (2009) propose that social entrepreneurship includes "*the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organizations in an innovative manner*". Innovation is in the core of social entrepreneurship, and way to develop businesses in a sustainable manner (Austin et al. 2006; Short et al. 2009). Social entrepreneurs are found across different industries, and are not limited to non-profit sector (Austin et al. 2006). The emphasis on multiple contexts, social value creation and innovation is often referred as the broad definition of social entrepreneurship (Austin et al. 2006; Dart, 2004), whereas the narrow definition of social entrepreneurship confines the phenomenon to non-profit sector with limited earnings potential, and application of business skills and expertise in unconventional context (Thompson, 2002). More recently, sustainable entrepreneurship has raised to the interest of academic literature (Schaltegger & Wagner, 2011). Sustainable entrepreneurship is a form of entrepreneurship combining sustainable development and entrepreneurship integrating social, economic and environmental value creation, or blended value creation (Cohen & Winn, 2007; Dean & McMullen, 2007; Hockerts & Wüstenhagen, 2010; Schaltegger & Wagner, 2011;

Shephard & Patzelt, 2010, Zahra et al. 2013). As defined by Shephard and Patzelt (2010), “*sustainable entrepreneurship is focused on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is broadly construed to include economic and non-economic gains of individuals, the economy, and society*”. Both discovery of entrepreneurial opportunities (Cohen and Winn, 2007; Hockerts and Wustenhagen, 2010; Zahra et al. 2013), and the role of innovations (Schaltegger & Wagner, 2011) in sustainable entrepreneurship are highlighted in the definition. Other similar terms used for describing enterprises with environmental goal include green entrepreneurship (Berle, 1991), ecopreneurship (Schaper, 2002), and environmental entrepreneurship (Koehn & Polonsky, 1998).

Social and sustainable entrepreneurship reflect two sides of sustainable development with minor differences in emphasis. The focus of social entrepreneurship is more on reaching societal goals and ensuring funding for achieving the goals, whereas sustainable entrepreneurship aims at identifying and utilizing entrepreneurial opportunities profitably through economic and non-economic gains (Schaltegger & Wagner 2011; Shephard & Patzelt 2010). On the other hand, it has been suggested that sustainable entrepreneurship contains both sides of sustainable development, social and environmental entrepreneurship (Hockerts & Wustenhagen 2010), and Schaltegger & Wagner (2011) propose that both social and sustainable entrepreneurship are sustainability-oriented entrepreneurship types. Moreover, true sustainable entrepreneurs are those who manage to integrate the three aspects of value creation: financial, ecological and social (Tilley & Young, 2009). As the entrepreneurship theory suggests, and the definitions of social and sustainable entrepreneurship, opportunity is at the core of entrepreneurship regardless of its type, and thus we propose that:

H1: Among the entrepreneurs, the likelihood of being social (rather than regular) entrepreneur is increased, when an opportunity (rather than necessity) is a motive to act entrepreneurially.

3. Social Entrepreneurial Activity and the Impact of Age and Education

Behaviors and values are impacted by individual differences, such as age and gender (Ralston et al., 2014), and behavior can be validly predicted through intentions (Bae et al., 2014). The impact of age differences on behavior and values have been explained in the literature by two theories: generation subculture theory and life stage theory (Ralston et al. 2014). The generation subculture theory states that the socio-economic and political environment from a person's youth shape one's values and behaviors (Inglehart, 1997). These values and beliefs that are common to a certain generation in a particular subculture that has experienced a macro-level event, such as economic recession or war, are carried with the particular generation intact throughout its lifetime (Egri & Ralston, 2004). For example, generation Y (born 1979-1994), is found to be environmentally aware, socially conscious and as a result of their need to become self-sustained more entrepreneurial than previous generations (Hewlett et al., 2009). Based on the discussion above related to generation subculture theory, young adults are suggested to be more entrepreneurial as a result of changes in the external environment, and thus we hypothesize:

H2: Age is negatively related to the likelihood of being an entrepreneur (rather than non-entrepreneur).

According to life stage theory, human development comprises of four distinct patterns that impact a person's values and behavior. For example, independence, personal and professional

growth, as well as care for family are in the center of attention for people aged 20 to 39 (young adulthood), while 40 to 59 year-olds focus on well-being of others and society as a result of stability in working and personal life (Erikson, 1997). The life stage theory suggests that as people age, they begin to notice issues in the surrounding society more than before, and thus we hypothesize:

H3: Among the entrepreneurs, age is positively related to the likelihood of being opportunity- (rather than necessity-) driven entrepreneur.

As the generation subculture theory suggests, certain values and beliefs characterize particular generations and impact their behavior. For example, the youth (18-24 year-olds) in UK has been found to be the age group that is most likely to become social entrepreneurs (Harding, 2006, p. 20). Moreover, social values have been associated with youth social entrepreneurial intentions in Finland (Rantanen & Toikko, 2013), while social entrepreneurship dimension (social vision, sustainability, social networks, innovation, and financial returns) have found to be affected by personality traits also in the context of college students and undergraduates in Malaysia. More specifically, openness to new things, care for consensus, and sense of responsibility have positive impact on the dimensions of social entrepreneurship. (Nga & Shamuganathan, 2010) Additionally, students have been found to pay more attention to questions of ecology, while service managers consider business ethics and social responsibility to be more important (Kraft & Singhapakdi, 1991), although the field of study may impact attention given to environmental and social values (Benton, 1994). Furthermore, connection between entrepreneurial intentions and sustainability orientation has been found among science and engineering students with limited business experience: the higher entrepreneurial intentions they have, the stronger the sustainability orientation (Kuckertz & Wagner, 2010). The level of education has been proposed to be a good indicator for social entrepreneurship activity: tertiary education are said to characterize social entrepreneurs (Harding, 2006, p. 20). As the generation subculture theory suggests, certain values and beliefs are common among certain generation, and in the case of young adults, it seems that societal and environmental issues are at the core of their agenda. Moreover, education plays role in social entrepreneurial intentions. Based on these two notions, we propose the following:

H4: Among the entrepreneurs, age is negatively related to the likelihood of being social (rather than regular) entrepreneur.

H5a: Among the entrepreneurs, level of education is positively related to the likelihood of being social (rather than regular) entrepreneur.

H5b: Among the entrepreneurs, level of education is positively related to the likelihood of being opportunity- (rather than necessity-) driven entrepreneur.

3. Methods and Data

The study analyses the Global Entrepreneurship Monitor (GEM) data, which was gathered in 2009. The GEM data is gathered from 49 countries around the world. The total sample consisted of 183 075 observations. We created social entrepreneurship (SE) variable by adopting the social entrepreneurship continuum by Lepoutre et al. (2013), which has been previously applied to identifying social enterprises (SE) in 2009 GEM data. The spectrum is formed based on mission, innovativeness and revenue model, and as a result five types of SEs are formed: NGO, not for profit (NFP), social hybrid (SHSE), economic hybrid (EHSE), and for profit social enterprise (FP SE).

Table1: Descriptive Statistics and SE type frequencies

NE/E=non-entrepreneur/entrepreneur, RE=regular entrepreneur, NE/OE= necessity-driven/opportunity-driven entrepreneur, Neces.=necessity, Opport.=opportunity, 2BE= 2nd level basic education, US=upper secondary, PSTN=post-secondary non-tertiary education, BM=bachelor/ master’s degree, RE = regular enterprise, YSE=young adult SEs, YRE= young adult regular entrepreneurs, YNE= young adult non-entrepreneurs, OSE= other SEs, ORE= other regular entrepreneurs, ONE=other non-entrepreneurs

SE types	N	Ent.ship types	N	Motive	%	Educa-tion	%	Country devel. level	%
NGO	1	YSE	155	Neces.	32.2	2BE	22.6	Factor	12.7
NFT	14	YRE	24 200	Opport.	67.6	US	39.4	Efficiency	27.6
SHSE	711	YNE	19 984			PSNT	14.6	Innovation	59.6
EHSE	154	OSE	1030			BM	23.5		
FP SE	342	ORE	143 076						
RE	32 358	ONE	111 445						
Percentage of Entrepreneurship Groups									
NE/E	%	RE/SE	%	NE/OE	%				
NE	79.0	RE	96.6	NE	32.6				
E	21.0	SE	0.04	OE	67.4				

We created two categorical variables: education level and country development level. Country development level has three categories that follow competitiveness index division: factor-, efficiency- (developing) and innovation-driven (developed) economies. The second categorical variable, education level, contains four levels ranging from second level basic education to first level tertiary education. We conducted cross-tabulations to compare the frequencies to examine the distributions types (Figures 1 and 2). Additionally, we compared group averages with Student’s T-test, and used binomial logistic regression analysis to examine the odds of being an entrepreneur, a social entrepreneur and an opportunity being the driver behind entrepreneurial actions. The analysis were executed with R. The largest number of social enterprises are SHSEs. These are SEs that generate more than 5 % of their revenues from the market, and their social/environmental goal is scored higher than their economic goal. The second largest amount of SEs is for profit social enterprises. These are regular enterprises, whose social/environmental goal is bigger than twice their economic goal. The lowest amount of SEs is found in the type NGO: the data only contains single NGO. The percentage of each variable’s categories, and the number of different SE types, as well as other groups used in analyses are presented in Table 1.

4. Analysis and Results

First, we compared group mean differences between SEs and regular entrepreneurs (RE), and non-entrepreneurs (NE) to examine whether SEs have specific characteristics. We found that SEs have on average significantly higher ($p > 0.01$) education level than REs and NEs (Table 2). Then we compared, the group means of social and REs and NEs among young adults (18-34) and older adults (over 35). The results show that YSE differs from YRE and YNE in terms of education level, YSE have significantly higher ($p < 0.01$) average education level than YRE and YNE. Moreover, compared with older adults, YSE have higher average education level than ORE and ONE at 0.1 risk level, while OSE have significantly higher average education level than YSE. This suggests that higher education level is important characteristic of SEs. Second, we examined the role of country development level to social entrepreneurial activity.

We found that country development level differences seem to impact social entrepreneurial activity: the number of different types and number of SEs increase as the country development level increases (Figures 1 & 2). Additionally, education level, SE types, motive and age group distributions differ according to country development level. First, there are five SE types in innovation-driven economies, while only three in factor-driven ones (Figure 2). Second, when examining social entrepreneurship, the highest number of social entrepreneurs in age group of 18- to 24-year-olds is in efficiency-driven economies, while in other age groups the highest number is in innovation-driven economies. In developing economies (1-2), the largest number of social entrepreneurs are 25- to 34-year-olds FP social entrepreneurs, although in general most social entrepreneurs are between 35 to 44 years old across country development levels. On the other hand, largest number of YSE is in SHSE and FP SE.

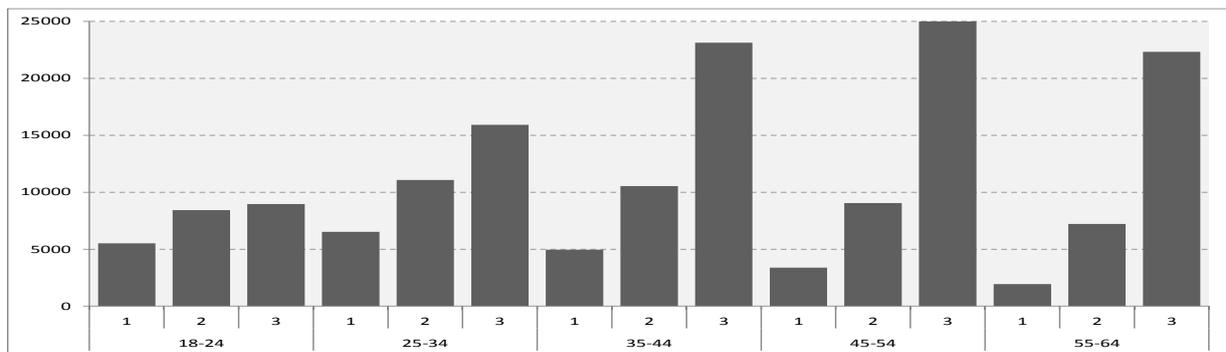


Figure 1: Age Group Distribution by SE Type and Country Development Level

There are more SEs with bachelor or master's degree in innovation-driven economies than in developing ones. In developing economies, secondary education characterizes SEs: the largest number of SEs has secondary education. Surprisingly, opportunity-driven social entrepreneurship is higher than necessity-driven one across country development levels. When examining country level differences among youth social entrepreneurs (YSE), we found that education level among YSEs is significantly lower in developing economies than in developed ones suggesting that social entrepreneurship is more common among young adults in developed economies than in developing ones (Table 2).

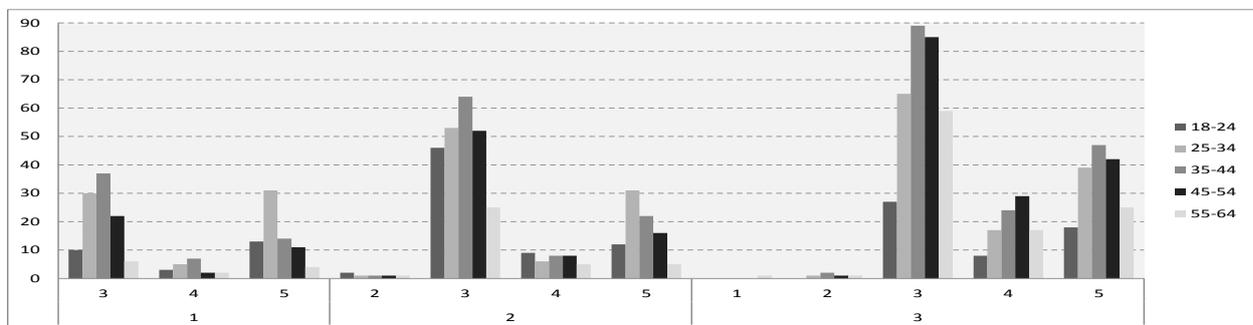


Figure 2: Social Entrepreneurship Type Distribution by Age Group and Country Development Level (1=NGO, 2=NFP SE, = SHSE, 4=EHSE, 5=FPSE)

Third, the differences between YSE and other (over 45) social entrepreneurs (OSE) were examined. The education level is higher among OSE than YSE in general, and the highest number of first stage tertiary education is among social entrepreneurs aged between 35 and 44. SEs are in general characterized by secondary or bachelor/master's degree. When comparing country development levels, YSE have significantly lower education level than OSE in

innovation-driven economies, while in developing economies there seems not be a difference. Moreover, YSEs in developed economies have higher average education level than YSE in developing economies. There are also similarities between the groups: the highest number of SEs operates in opportunity-driven enterprises, and the same applies to SE across age groups. Additionally, OSE are more involved in established companies than YSE, although majority of both operate in start-ups. We also compared YSE with REs and NEs. Regardless of country development level, NEs have lower education level than SEs among young adults. On the contrary, YSE have significantly higher average education level than REs in developing economies, while OSE has higher average education level than YSE in developed economies. YSE are more motivated by necessity than REs across countries. (Table 2).

Table 2: T-test results

M= mean, Significance codes: $p < 0.01 = ***$, $p < 0.05 = **$, $p < 0.1 = *$

	<u>Education level</u>					<u>Motive</u>				
	(1)		(2)		t-test	(1)		(2)		t-test
	M	SD	M	SD		M	SD	M	SD	
SE(1)-RE(2)	2.56	1.27	2.07	1.29	13.21***	0.23	0.42	0.02	0.15	17.16***
SE(1)-NE(2)	2.56	1.27	2.08	1.28	13.18***	-	-	-	-	-
Overall										
YSE(1)-YRE(2)	2.27	1.11	1.98	1.04	3.22***	0.27	0.45	0.03	0.17	6.73***
YSE(1)-YNE(2)	2.27	1.11	2.01	1.03	2.94***	-	-	-	-	-
YSE(1)-OSE(2)	2.27	1.11	2.59	1.28	-3.31***	0.27	0.45	0.23	0.42	1.20
YSE(1)-ORE(2)	2.27	1.11	2.11	1.32	1.80*	0.27	0.45	0.02	0.15	0.02
YSE(1)-ONE(2)	2.27	1.11	2.11	1.31	1.75*	-	-	-	-	-
Developing										
YSE(1)-YRE(2)	2.09	1.04	1.77	1.00	3.01***	0.26	0.44	0.04	0.20	4.91***
YSE(1)-YNE(2)	2.09	1.04	1.79	0.98	2.82***	-	-	-	-	-
YSE(1)-OSE(2)	2.09	1.04	2.16	1.26	-0.52	0.26	0.44	0.22	0.42	0.85
YSE(1)-ORE(2)	2.09	1.04	1.69	1.25	3.80***	0.26	0.44	0.04	0.19	5.00***
YSE(1)-ONE(2)	2.09	1.04	1.70	1.25	3.70***	-	-	-	-	-
Developed										
YSE(1)-YRE(2)	2.49	1.84	2.23	1.04	1.60	0.25	0.44	0.01	0.12	4.05***
YSE(1)-YNE(2)	2.49	1.84	2.22	1.03	1.67*	-	-	-	-	-
YSE(1)-OSE(2)	2.49	1.84	2.97	1.17	-2.86***	0.25	0.44	0.22	0.42	0.52
YSE(1)-ORE(2)	2.49	1.84	2.37	1.29	0.73	0.25	0.44	0.01	0.12	4.06***
YSE(1)-ONE(2)	2.49	1.84	2.33	1.29	0.98	-	-	-	-	-
Developing vs. developed										
YSE(1)-YSE(2)	2.09		2.49		-2.06**	0.26	0.44	0.25	0.44	0.12

We conducted regression analyses to examine three different regression models (Table 3). All models are significant ($p < 0.05$), but the model estimates fit the data at an acceptable level only in the second model (Hosmer-Lemeshow $p > 0.05$), while in the other two models the estimates do not fit the data. This might be due to the size of the data. Moreover, it should be noted that the model fit statistics imply poor fit (Nagelkerke pseudo R^2 between .02 and .07). The odds of a person with bachelor or master's degree are 1.49 times higher than one with basic level education to be an entrepreneur. Interestingly, the odds being an entrepreneur are 1.16 times higher for a person with secondary compared to a person with basic education, while post-secondary-non tertiary education increases the odds 1.13 times. (Table 3) Both efficiency- and innovation-driven economies decrease the odds of a person being an entrepreneur. The odds of person being an entrepreneur are the highest when he or she is 35 or older, has a university degree, and is from a developing economy. In the model of regular-social entrepreneurship, only innovation-driven economies are significant ($p < 0.01$), while other independent variables

are insignificant. The odds of being a social entrepreneur are 1.91 times higher in developed economies than in factor-driven ones. As a result, H1, H4, and H5a are not supported.

Table 3: Logistic regression analyses

NE/E = non-entrepreneur/entrepreneur, RE/SE = Regular entrepreneur/social entrepreneur, NE/OE = necessity-driven entrepreneurship/opportunity-driven entrepreneurship, non-ter. =non-tertiary

Significance codes for Wald chi-square: p< 0.01=***, p< 0.05=**, p<0.1=*

	<u>NE/E</u>				RE/SE				NE/OE			
	β	SE	χ^2	EXP (β)	β	SE	χ^2	EXP (β)	β	SE	χ^2	EXP (β)
Intercept	-1.57	0.04	-38.60***	0.21	-	0.33	-9.20***	0.07	0.37	0.16	2.34**	1.87
Age (young/old)	0.51	0.02	25.24***	1.66	0.16	0.16	1.04	1.18	-	0.08	-0.57	0.95
Education level (1)			0				0				0	
2nd stage of basic educ.	0.15	0.02	8.59***	1.16	-	0.16	-0.30	0.96	0.26	0.08	3.26**	1.32
Upper secondary	0.12	0.02	5.35***	1.13	0.05	0.20	0.55	1.10	0.59	0.11	5.26***	2.07
Post-secondary, non-ter.	0.40	0.02	19.99***	1.49	0.11	0.18	0.30	1.08	1.02	0.10	9.86***	3.90
Bachelor or master's dg					0.11							
Opportunity/necessity					-	0.12	-1.47	0.84				
Country dev. Level (1)			0		0.17							
Factor-driven	-0.59	0.02	-29.53***	0.55	0.13	0.15	0.88	1.16	-	0.07	-1.63	0.93
Efficiency-driven									0.12			
Innovation-driven	-1.20	0.02	-62.53***	0.30	0.59	0.15	3.90***	1.91	0.42	0.09	4.81***	1.28

Likelihood ratio test	4628.05***	31.45***	231.53***
Score test	12.2*10 ⁶ ** *	4.8*10 ⁵ ***	5.2*10 ⁴ ** *
Wald test	4595.2***	33.6***	210.4***
<u>Goodness-of-fit test</u>			
Hosmer & Lemeshow	106.19***	6.75	25.64***
Nagelkerke R ²	0.05	0.02	0.06

Lastly, in the model for necessity-driven/opportunity-driven entrepreneurship, age does not significantly impact the odds of being an opportunity-driven entrepreneur, thus H3 is not supported. The odds of a person with bachelor or master's degree being an opportunity-driven entrepreneur are 3.6 times higher than a person with basic education. Similarly, the odds of a person with secondary ($p < .05$) and post-secondary non-tertiary education ($p < .01$) being an opportunity-driven entrepreneur are higher compared to a person with basic education. As a result, H5b is supported. Similarly, innovation-driven economies increase the odds of being an opportunity-driven entrepreneur 1.28 times compared to factor-driven economies.

Table 4: Classification table with 0.3 cut-off value

Observed	Predicted						Overall Correct %
	NE	E	RE	SE	NE	OE		% Correct
NE	10136	2428					80.68
	9	2					
E	11467	6471					36.97
							75.10
RE			4638	367			92.67
SE			-	-			-
					1122	2481	31.14
NE					465	998	68.22
OE							41.85

We examined the validity of predicted probabilities (Table 4), and the first model has the highest predictive validity. The overall rates of correct classification predictions were 75.10 and 41.85 percentage. We could only predict the amount of RE at the 0.3 level, and to predict SE, we would need to set the cut-off to 0.1. The issues with predictions relate to the small size of SE sample and, on the other hand, to the large size of total sample.

5. Discussion, Limitations and Further Research

We started by examining whether SEs differ from NEs and REs. Our findings show that SEs have distinct characteristics compared to NEs and REs. SEs have higher education level and are more motivated by an opportunity to start a business. On the other hand, YSE is less educated on average than OSE in developed economies, but more than REs and NEs in developing economies. First, we did not find support for the increase in odds of being a social entrepreneur, when the underlying motive for entrepreneurial activity is an opportunity rather than necessity (H1), although the results of cross-tabulations suggested that there is larger number of opportunity-driven SEs than necessity-driven ones across country development levels. The lack of significance might be explained by perceived underlying motive: the role of opportunity is not seen as the underlying motivator for social entrepreneurship, but rather it is a problem or an issues that the entrepreneurs is trying to solve. Second, we did not find support for young age increasing the odds of a person being an entrepreneur (H2). Contrary to our hypothesizing, higher age (above 35) is positively related to person being an entrepreneur rather than non-entrepreneur. The finding suggests that the generation subculture theory does not explain the odds of a person being an entrepreneur across national borders, and support the life cycle theory by Erikson (1997). The theory suggests that young adults are more focused on their professional careers, and core family, which implies that young adults may not be willing to take risks that are associated with entrepreneurship. They rather want to support their families and develop their work skills and knowledge.

Third, the odds of being involved in an opportunity-driven enterprise rather than necessity-driven one is not positively related to older age, and thus the hypothesis 3 was not supported (H3). Age is not a significant predictor of a person being an opportunity-driven entrepreneur. Our results imply that despite the life cycle theory suggesting that older people should be more attentive towards noticing issues in surrounding society, this may not be the case in reality. On the other hand, we found support for the higher education level increasing odds of a person being involved in an opportunity-driven enterprise (H5b). Furthermore, comparison of group means showed that SEs have higher education level than REs and NEs. These findings provide support for the hypothesis 5b. Moreover, our findings support the notion of Venkataraman (1997) about the role of specialized knowledge as a key to identifying entrepreneurial opportunities. Additionally, our results support the notion of developing countries having higher necessity-driven entrepreneurship levels (Ellis & Williams, 2011), as higher country development level increases the odds of a person being an opportunity-driven entrepreneur. Fourth, contrary to the generation subculture theory, we did not find support for younger age increasing the odds of a person being a social entrepreneur (H4). Moreover, as the cross-tabulations showed, the largest number of social entrepreneurs are aged between 35 and 44. The results support the by life cycle theory: young adults focus on professional growth and core family, while older people tend to be concerned about the surrounding society (Erikson, 1997). Also, young adults are often facing financial distress after graduation, which impacts their choice of employment. On the other hand, there might be lack of awareness, when it comes to social entrepreneurship, and the limited attention given to it by the academic world and media. Lastly, higher education level do not increase the odds of a person being a social entrepreneur, and thus hypothesis 5a is not supported. Although education level is not significant predictor of social entrepreneurship, the group mean differences show that higher education level can be considered to characterize SEs.

We made several additional findings based on analyses results. First, the cross-tabulations of the data provide support for the broad definition of social entrepreneurship. Majority of the social enterprises identified in line with the definition of Lepoutre et al. (2013) were hybrids or for profit social enterprises. Only 15 social enterprises were non-profits. This support for broad definition of social entrepreneurship highlights the variety of industries and business models that are included under the social enterprise definition. Second, country development level has impact in different types of entrepreneurship. The likelihood of a person being a social or opportunity-driven entrepreneur is positively impacted by the increase in country development level, while it is negatively related to a person being an entrepreneur. Moreover, there is more variety in the types of SEs, and the amount of SEs is higher in innovation-driven economies than in developing economies. This suggest that neither the generation subculture theory nor the life cycle theory explains the social entrepreneurial activity among young adults. Lastly, it has been suggested by Kautonen and Palmroos (2009) that that entrepreneurs originally motivated by necessity are less satisfied with self-employment compared to those who are motivated by opportunity, although adequate financial returns tend to lower perceived dissatisfaction. This could indicate that having an opportunity that is in line with an entrepreneur's values and beliefs makes social entrepreneurs more satisfied with their situation. All in all, our results show how country development level differences impact social entrepreneurial activity among young adults, and point out the need for specialization education as well as increasing awareness about social entrepreneurship especially among young adults.

There are limitations in our current research. First, the GEM data is from 2009, but unfortunately there is no newer GEM data available focusing on social entrepreneurship. Using GUESS data could provide more contemporary evidence about entrepreneurial intentions among young adults. Second, there are only limited amount of variables that were examined to impact the odds of being an entrepreneur, social entrepreneur, and opportunity-driven entrepreneur. Including variables, such as family background in entrepreneurship and the perceived competitive environment, could impact the entrepreneurial activity among young adults. Moreover, having large quantitative data only reveals large patterns and trends in the data, and the detailed findings are invisible. Examining the country-level differences could provide more insight for the phenomenon. Executing a more in-depth research comparing different countries or case studies could provide deeper and more detailed information about the phenomenon, and the nature of the opportunities utilized in social and sustainable entrepreneurship.

6. Conclusions

The aim of the research was to examine social and sustainable entrepreneurship activity among young adults across countries. In doing so, we sought to provide more evidence about social and sustainable entrepreneurship, and simultaneously respond to some of the gaps in social and sustainable entrepreneurship literature. Additionally, we compared two theories explaining differences in entrepreneurial activity across age groups, and showed that the life cycle theory better explains different entrepreneurial activity. By using GEM 2009 data, we were able to examine social and sustainable entrepreneurship in different national contexts. We detected that the variety in social entrepreneurial activity differs according to country development level. We did not find support for neither generation subculture theory nor the life cycle theory explaining social entrepreneurial activity among young adults. On the contrary, country development level is the only significant variable in estimating social entrepreneurial activity. Interestingly, our results provide support for life cycle theory explaining entrepreneurial behavior, as older age increases the odds of a person being an entrepreneur.

Higher education level increases the odds of a person being an opportunity-driven entrepreneur providing support for the role of specialized knowledge. Additionally, country development level seems to impact the odds of a person being any type of an entrepreneur. The results provided support for broad definition of social entrepreneurship by showing the variety of social enterprises existing across countries, and highlight the role of education and country development level in estimating entrepreneurial activity. Our results contribute to characteristics of social and sustainable entrepreneurs, and factors affecting the estimating the entrepreneurial activity. Social entrepreneurial activity among young adults is not explained by generation subculture or life cycle theory, while the environment seems to play important role.

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The Influence of Human Capital of Chinese Entrepreneurs on the Strategy and Process of Using Guanxi in Resource Acquisition

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The Influence Of Human Capital Of Chinese Entrepreneurs On The Strategy And Process Of Using *Guanxi* In Resource Acquisition

Abstract

An entrepreneur's human and social capital can have important influence on the venture creation process, particularly in resource acquisition during the startup and early growth stages of the venture. Moreover, a particular form of human capital may help build social capital for the new venture, and facilitate the acquisition of other resources during the startup and growth phases of the firm. In this study we intend to explore the influence of a particular type of human capital, overseas versus local post-secondary education, of Chinese entrepreneurs, interacting with other types of human capital, on the strategy and process of using *guanxi*, a particular form of social capital in China, for acquiring financial and human resources, and new customers, during the startup and early growth phases of new ventures.

Introduction

An entrepreneur's human and social capital can have important influence on the venture creation process, particularly in resource acquisition during the startup and early growth stages of the venture (Cooper, et al., 1994; Dubini & Aldrich, 1991; Florin, et al., 2003). Moreover, a particular form of human capital may help build social capital for the new venture (Nahapiet & Ghoshal, 1998), and facilitate the acquisition of other resources during the startup and growth phases of the firm (Florin, et al., 2003). In this study we intend to explore the influence of a particular type of human capital, overseas versus local post-secondary education, of Chinese entrepreneurs, interacting with other types of human capital, on the strategy and process of using *guanxi*, a particular form of social capital in China, for acquiring financial and human resources, and new customers, during the startup and early growth phases of new ventures. As China underwent its economic reform in the last three and a half decades, entrepreneurship has emerged as one of the most important driving forces behind China's rapid economic development (Yang and Li, 2008). Despite that, Chinese entrepreneurs still face considerable barriers in overcoming environmental constraints and accessing critical resources for building their ventures (Peng, 2000). Human and social capitals of entrepreneurs are important initial resources that can be utilized to overcome such barriers. Hence it is important to understand how human capital of Chinese entrepreneurs influences their use of *guanxi* in acquiring other resources for startup and growth.

Some initial insights generated from our first round of coding are: 1) Overseas and locally educated entrepreneurs have different perception with regard to the overall usefulness of *guanxi* in resource acquisition. 2) Due to the lower level of tacit knowledge in utilizing *guanxi* in China comparing to their locally educated counterparts, overseas entrepreneurs are less likely to use *guanxi* to acquire financial resources or customers for their ventures. They do, however, use both their local and overseas networks to collect business information to assess market and determine the type of products or services they want to focus on. 3) With regard to the acquisition of human resource (core team members), overseas educated entrepreneurs seem to be able to assemble a more diverse team than locally educated entrepreneurs, by using both their direct ties from overseas, and indirect ties back home. 4) The explicit knowledge acquired through an overseas education compensates for the lack of tacit knowledge in *guanxi* utilization, especially during the growth phase of the venture. Further rounds of coding travelling between theory and data are yet to be conducted to arrive at a conceptual model. Additional samples are needed to reach theoretical saturation. Our study contributes to the growing stream of literature on effects of human and social capital on the entrepreneurial process, by relating to the specific socio-cultural context of a particular country and teasing out

some of the underlying dynamics. By exploring how a specific kind of human capital, in the form of an overseas education versus local education, influence the networking strategies and process of an entrepreneur in acquiring different types of critical resources, we hope to inject new insight and generate new research questions for future research on the effect of human and social capital on entrepreneurship, taking specific socio-cultural context into account.

Theoretical Background

Resource-based view of the firm and entrepreneurship

Penrose argued that a firm consists of “a collection of productive resources” (Penrose, 1959: 24) and how such resources are employed contribute to growth of the firm. This form the basis for the resource-based theory of the firm with the premise that differences in firm resource endowments both exist and persist over time, thereby allowing for a resource-based advantage (Barney, 1991). The RBV implies that differential endowment of organizational resources is an important determinant of strategic actions and performance.

An increasing number of scholars have applied resource-based view of the firm to entrepreneurship, in studying the role of resources in venture development and outcomes (e.g., Bergmann-Lichtenstein & Brush, 2001; Chandler & Hanks, 1994; McGrath, 1996; Mosakowski, 1993). Scholars have argued that entrepreneurs have individual-specific resources that facilitate the assembling of resources for the venture (Alvarez & Busenitz, 2001), and based on such resource endowments new ventures accumulate different “bundle of resources” over time (Bergmann-Lichtenstein & Brush, 2001). One criticism is that with its focus on the possession of resources and capabilities, the RBV is inherently static (Kraaijenbrink, Spender & Groen, 2010). Questions such as how one resource endowment may affect the mobilization of another resource has not been explored.

Human capital, social capital and resource acquisition in new ventures

Human capital can be broadly defined as “the individual’s capabilities, knowledge, skills and experience” (Dess & Picken, 2008). One common avenue to build human capital is through education. Specifically related to entrepreneurship, human capital in the form of an entrepreneur’s own education or as life experiences can have important effect on a new venture’s survival and growth (Cooper, et al., 1994). Such “human capital endowment” can also have a direct effect on the acquisition of critical resources at different stages of the venture (Florin, et al., 2003). In this study human capital refers specifically to the knowledge, skill and experience an entrepreneur gained through its post-secondary education, in the form of an overseas or local education received from a tertiary educational institute.

An entrepreneur’s human capital is closely related to his or her social capital, as one’s life experiences provide access to a pool of networks, which the entrepreneur can utilize in the venture process (Cooper, et al., 1994; Florin, et al., 2003). To understand the impact of entrepreneurs’ human capital on organizational advantage (or disadvantage), we may need to consider how a particular form of human capital influence the type and nature of the network ties entrepreneurs have, and the way how those ties are being utilize, thus facilitating (or hindering) the venture resource acquisition process.

Social capital can be defined as “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or a social unit” (Nahapiet & Ghoshal, 1998: 243). Social capital hence depends not only on the

existence of the social network, but how that network is being utilized. Scholars in sociology (Walder, 1995), psychology (Bond, 1996), economics (Scott, 1995), and management (Luo, 2003) note that variances in systems of relational exchange across cultures.

Education and human capital in the specific context of China

Education is an important avenue to build human capital, and the high investment in education has been considered to be one of the key contributors to the “economic miracle” in East Asia (Tilak, 2002). Specifically in China, emphasis on education has always been high, tracing back to the influence of Confucianism. In China during the last three decades, such an emphasis is amplified in the growing number of students pursuing their post-secondary education overseas. The number of overseas students from China has grown at a 2-digit annual rate since its ‘reform and opening’ in 1978, to a cumulative number of 2.2 million by 2011 (Xinhua net, www.xinhuanet.com). In the year of 2010, China ranked No. 1 in its size of overseas students, and contributed 14% of the total population of overseas students in the world (UNESCO and Ministry of Education of China, P.R.). Moreover, 62% of the overseas students returned to China upon graduation, and the percentage is trending upward. In Chinese, returnees from overseas with advanced education are often called “HaiGui”, which means “returnees from overseas” but also a homonym of “sea turtles” in Chinese pronunciation.

A growing number of studies have examined the various effects of overseas returnees on China’s socio-economic development. Shen (2007) maintained that returnees are vital human capital for securing the growth of the Chinese economy and the development of global cities such as Shanghai. McGrath, Stock, and Butcher (2007) suggested that returnees might, in effect, serve as international diplomats to liaise between their host and home countries. Iredale and Gao (2001) identified the influence of returnees as being agents for social change and cultural transformation. Similarly, Wang and Zweig (2009) highlighted the bridging role that returnees play in linking China to the rest of the world, especially through entrepreneurial endeavours and international trade and businesses.

At the micro level, studies also reviewed that an overseas education can increase a student’s human capital upon returning to China, resulting in better employment opportunities, higher job performance and job satisfaction (e.g., Jiang, 2010; Waters, 2006). In recent years, however, due to the rapidly increasing number of returnees, employment opportunities for these returnees may not be as rosy as they used to be (Zweig & Han, 2008).

Besides becoming employees, a growing number of overseas returnees have chosen entrepreneurship as an alternative career (Wang, 2011). This is no surprise given the growing importance of entrepreneurship in contributing to China’s economic growth, and the incentives local and central governments put together to encourage entrepreneurial pursuits (Research Center of China’s Private Enterprises of Ren Min University; www.rcpec.com). Specific programs were set up by the central and local governments to encourage sea turtles to capitalize on the unique human capital they have acquired through their overseas education and experience in building new ventures (Wang & Lu, 2012). Little research, however, has been conducted to examine the effects of an overseas education versus a local one on the venture process and outcome. By illuminating the intricate relationships between human capital and social capital, and their impact on resource acquisition, through an exploratory case study, we hope to generate some new theoretical insights guide future research, and some practical knowledge that can be of reference for those who pursue entrepreneurship in China.

Guanxi as social capital in entrepreneurship in China

In the particular cultural context of China, the formation of social capital and the utilization of social ties are governed by the concept of *guanxi*. According to Park and Luo (2001), *guanxi* “refers to the concept of drawing on a web of connections to secure favours in personal and organizational relations”. *Guanxi* originates from a collectivist society in which interpersonal harmony is an important terminal value (Yang, 1994) and the relational core is paternal (Fukuyama, 1995). The dyadic relationships in *guanxi* are “based implicitly (rather than explicitly) on mutual interest and benefit. Once *guanxi* is established between two people, each can ask a favour of the other with the expectation that the debt incurred will be repaid sometime in the future (Yang, 1994: 1-2).

Ascribed traits, achieved characteristics, and shared experiences (Gold, Guthrie & Wank, 2002) provide the natural bases for *guanxi* to expand. *Guanxi* can also be created through interpersonal transfers of trust and relational ties (Peng & Luo, 2000). In so doing, *guanxi* expands into a rich pool of shared ties and obligations (Chang & Holt, 1991), a process especially useful to individuals and firms lacking natural ties with a diversity of partners. This is in contrast to relational exchanges that are often not easily transferable (Gu, Hung & Tse, 2008). In a fast changing economic environment in which institutional support and protection for private businesses are still relatively weak, *guanxi* perform an important role as a substitute or at the least a supplementary governance and facilitating mechanism for business activities in China (Xin & Pearce, 1996; Redding, 1990). *Guanxi* is often transferred from the individual level to the firm level (Peng and Heath, 1996).

Due to the liability of newness and smallness (Stinchcombe, 1965), entrepreneurs face considerable barriers in accessing critical resources in general (Baker & Nelson, 2005; Leung, et al., 2006), and in the specific context of China (Peng, 2000; Xin & Pearce, 1996). The utilization of networks helps new ventures to overcome some of those constraints (Dubini & Aldrich, 1991; Leung, et al., 2006). Chinese entrepreneurs recognize that the importance of *guanxi* is deeply ingrained in the Chinese culture (Guo & Miller, 2010), and research (e.g., Guthrie, 1998; Xin & Pearce, 1996) has shown that one of the most important ways Chinese entrepreneurs overcome obstacles to venture formation is through the utilization of *guanxi*. Other studies (e.g., Batjargal, 2007; Batjargal & Liu, 2004; Carlisle & Flynn, 2005; Wu & Leung, 2005) have shown that there is a significant association between entrepreneurs’ *guanxi* ties and entrepreneurial outcomes in China.

While the importance of *guanxi* in entrepreneurial pursuit is widely recognized, different background and experience of the entrepreneur may have an influence on the type and nature of *Guanxi* ties he or she may have, and the specific knowledge of how they work, hence affecting the relative success in acquiring different resources. Further, new ventures at different developmental stages have different resource needs, and hence the type and nature of the network ties entrepreneurs utilize to acquire necessary resources may change over time (Hite & Hesterly, 2001; Leung, 2003). In multiple-case method to examine the development of Chinese entrepreneurs’ *Guanxi* networks in the entrepreneurial process, Guo and Miller (2010) identified different types of networks being utilized at different stages of the new venture. In the creation stage, affection-based strong ties (*Ganqing*) provide the entrepreneur with access to start-up resources without payback obligations. As the firm reaches the early growth stage, a sparse network (*Renqing*) enables the entrepreneur to acquire other resources from the non-kin business associates or through brokers and intermediaries. In the later growth stage, instrumental weak ties (*Jiaoqing*) allow the entrepreneur to fully take advantage of the network

benefits: fast, diverse market information and a cost-efficient way of identifying new business opportunities. How the entrepreneur's human capital affects the types of Guanxi an entrepreneur possess, and the intangible knowledge of how to effectively utilized those networks, however, has not been explored.

In sum, taking into account the theoretical under-pinning of resource-based view of the firm, and arguing that the human and social capital of entrepreneurs represent the "resource endowment" of the venture, we intend to conduct an exploratory study to tease out the effect of educational background (overseas vs. local) on the utilization of *guanxi* in resource acquisition for new ventures during their early developmental stages. Over and above human and financial resources, customer base also forms part of a venture's resource base, as it provides a revenue base on which the firm can sustain and grow. Figure 1 represents the initial concept model we build to guide our study.

Insert Figure 1 around here

Methods

As our study represents an initial effort to explore a question that has not been widely studied yet, we consider a case study approach more appropriate (Yin, 1984). We intend to conduct an inductive study to build a conceptual framework on how human capital in the form of an overseas versus a local education may impact on the type of social and intellectual capital accumulated by entrepreneurs, and hence their effects on resource acquisition for new ventures. We use the theoretical sampling approach to build up sufficient number of cases to identify common themes and to build our theory (Eisenhardt, 1989). Theoretical sampling is widely employed in qualitative studies (e.g., Harris and Sutton, 1986; Gersick, 1988; Pettigrew, 1988). By doing this, cases have been chosen for theoretical reasons, rather randomly from the target population, to replicate previous cases or extend emergent theory (Eisenhardt, 1989). To recruit cases of repatriate entrepreneurs, we have identified two government-funded incubators, Zhang Jiang Hi-tech Park and Wu Jiao Chang Hi-tech Park, that provide funding and services specifically to those entrepreneurs. A matching group of locally educated entrepreneurs is identified through the recommendations from venture capital firms in Shanghai. Snowballing sampling strategy is also used to acquire sufficient participants. Since the Chinese government at different levels started in 2008 to issue favorable incentives to encourage overseas students who have high education qualifications to return, we will focus on firms established after 2008, in the hi-tech industry.

The co-author of this study, who is fluent in both Mandarin and Shanghainese, carried out in-depth interviews with 8 expatriate and 8 locally educated entrepreneurs using semi-structured and open-ended questions, between 2013 and 2014 in Shanghai. The questionnaire was first constructed in English and then translated into Chinese by the co-author, and verified by the first author who has proficiency in both English and Chinese. Each interview lasted approximately 90 minutes. All interviews are recorded, translated from Chinese to English, transcribed and coded at least twice by the two authors to identify repeated themes and build a conceptual framework to illuminate to depict in what ways different types of human capital influence the acquisition of resources for survival and growth of new ventures. Information

from the incubator office, venture capitalists and company websites were used for triangulation to enhance validity of the self-reporting data. The first round of coding has been done based solely on interview data, capturing some of the themes highlighted in our model. A second round of coding, followed by some follow-up interviews and data triangulation are still needed to complete our analysis and generate some substantive findings for solidifying the final conceptual model. In the next section we will report some of those initial findings. Table 1 and 2 provide a summary of the initial findings.

Insert Table 1 & 2 around here

Preliminary Analysis and Findings

Human capital and resource acquisition

Overall, human capital of overseas educated entrepreneurs seems to play a bigger role in resource acquisition comparing to locally educated entrepreneurs, though not necessarily only attributed to their overseas experience. Both overseas- and locally educated entrepreneurs indicated that their prior work and entrepreneurial experiences contributed positively to the acquisition of founding team members and initial employees. Overseas educated entrepreneurs, however, enjoy the additional benefit of the exposure to the Western management organizational practices that help attract initial employees and build organizational commitment – for example, an organizational culture that is based on respect, fairness and work-life balance. Compared with locally educated entrepreneurs, they are able to assemble a more diverse team using both their direct ties from overseas, and indirect ties back home. While overseas educated entrepreneurs tend to leverage their prior work and entrepreneurial experience in China to accrue capital (saving), locally educated entrepreneurs tend to use *guanxi* for such endeavour. Prior work experience in China (for both groups of entrepreneurs) contributes positively to the acquisition of initial customers. However, due to the culture distance between the west and the east, overseas exposure may hinder entrepreneurs in following the Chinese business rules, and thus may have potential negative effects in acquiring new customers.

The use of guanxi in resource acquisition

Overseas and locally educated entrepreneurs have different perception with regard to the usefulness of *guanxi* in building their new ventures. Overseas educated entrepreneurs believe that cutting edge technology is more important than *guanxi* for their venture. So they build *guanxi* based more on personal fit rather than business objectives. They consider *guanxi* as a social debt that must be repaid in the future. This definition is similar with Guo and Miller's (2010) definition of *renqing*, which involves less affection and more economic instrumentality, so they are only using that for acquiring employees but not business partners, nor do they consider that as the proper channel to get funding or initial customers. They view *guanxi* as a channel through which they can approach useful information about and/or potential clients. However, they believe that the technology they brought back to China is more important than *Guanxi* to their business success.

In the contrary, locally educated entrepreneurs have a comprehensive understanding of *guanxi* as well as its multiple layers composed of different social ties with different social associates. They acknowledge that a *guanxi* network started with a small, core circle of *ganqing* (affection)-based ties with the entrepreneurs' family members and close friends. As the business grows, they consciously weave their *guanxi* web from the core circle to an

intermediary and then a periphery circle composed, respectively, of *renqing* (reciprocity)- and *jiaoqing* (acquaintance)-based ties with other non-kin members. From their perspectives, *guanxi* is the most important asset of their businesses, in other words, *guanxi* is everything – information, referrals, talents and clients.

Utilization of guanxi in resource acquisition

Having been away from China for years, overseas-educated entrepreneurs possess lower level of tacit knowledge in utilizing Guanxi comparing to their locally educated counterparts. Observed from our study, overseas entrepreneurs rely heavily on Ganqing ties to acquire financial resources, mainly through a co-foundership approach, and initial clients for their new ventures. Since Guanxi is perceived not important to the business success, they usually adopt an interest-based strategy to expand their Renqing ties without a clear business purpose. Due to an antipathy towards the ‘dark side’ of Guanxi that stemmed from the culture distance, some overseas-educated entrepreneurs choose to partner with individuals and/or organizations that has strong local connections in the Chinese market. In this sense, the human capital developed in overseas work and living experience somehow hinder the resource acquisition. In addition, overseas-educated entrepreneurs may have specific social capital through studying/working abroad and they may be able to use that social capital to access diverse sources at late stages of the firm.

Locally educated entrepreneurs, however, are much more strategic and experienced in the use of Guanxi. To them, interest is just the starting point of building Guanxi while short-/long-term mutual benefit is the bond. They have a thorough perception that different types of Guanxi have different values to their business. Each type of Guanxi has its distinctive mechanism and they know how to manage various ties.

Discussion

Our study contributes to the growing stream of literature on effects of human and social capital on the entrepreneurial process, by relating to the specific socio-cultural context of a particular country and teasing out some of the underlying dynamics. By exploring how a specific kind of human capital, in the form of an overseas education versus local education, influence the networking strategies and process of an entrepreneur in acquiring different types of critical resources, we hope to inject new insight and generate new research questions for future research on the effect of human and social capital on entrepreneurship, taking specific socio-cultural context into account.

This research provides a window to better comprehend and evaluate the value of an overseas education versus a local education to entrepreneurial pursuits during the early stages of new ventures. Theoretically, our study builds on and extends the resource-base view of the firm by affirming that firm specific features can affect venture performance. Through a case study approach, we explicitly depicted how overseas education and living experience influence the networking strategies of an entrepreneur in acquiring different types of critical resources. Our study also sheds light on how overseas-educated entrepreneurs can leverage human capital generated from their overseas education, while counteract the disadvantages in their process of navigating their ventures to success.

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Figure 1 Initial Conceptual Model

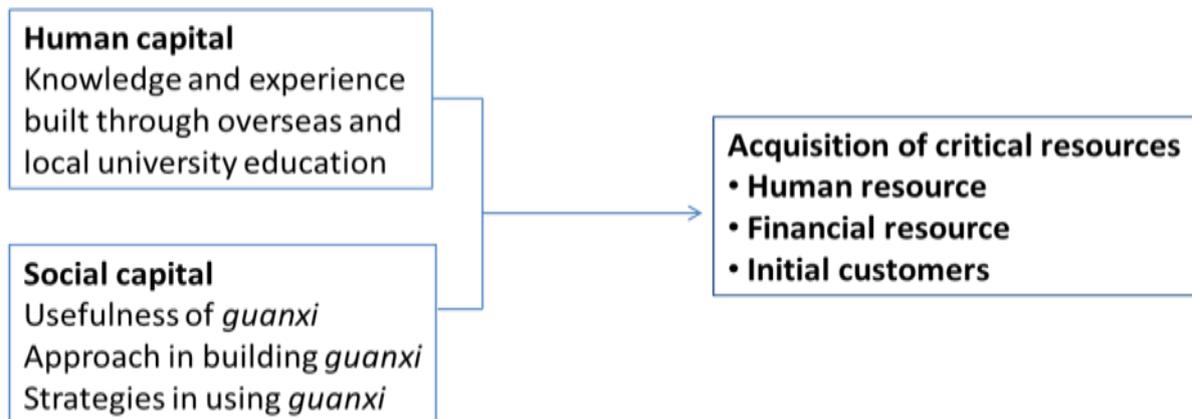


Table 1 Summary of Initial Findings – Human Capital and Resource Acquisition

	Overseas Educated	Locally Educated
Prior industry (employed) experience and human resource acquisition	Work experience within China positively influence in the successful acquisition of founding team members due to stronger <i>guanxi network</i> , while work experience overseas contribute positively to the successful acquisition of initial employees due to the incorporation of respect, fairness, work/life balance and teamwork in organizational culture and practices	Work experience contribute positively to the acquisition of human resource both for the founding team and for initial employees
Prior industry (employed) experience and financial resource acquisition	Work experience in China contributes positively to the acquisition of initial funding (in the form of personal saving), yet overseas work experience tends to have somewhat negative effects on acquiring funding due to the trade-off between earning and experience	No effect on initial funding
Prior industry (employed) experience and acquisition of first customer	Work experience within China facilitate the acquisition of initial customers due to stronger <i>guanxi network</i>	Positive effect due to connection to prior clients while working
Prior entrepreneurial experience and human resource acquisition	Entrepreneurial experience within China positively influence the number of <i>guanxi</i> , hence the acquisition of partners and core employees, while work experience overseas does not seem to have an impact	Positive effect on partner selection due to prior experience acquiring know-how; yet no effect on successful acquisition of initial employees
Prior entrepreneurial experience and financial resource acquisition	Entrepreneurial experience within China facilitates the acquisition of financial resources by know-how	No effect
Prior entrepreneurial experience and acquisition of first customer	Entrepreneurial experience within China facilitates the acquisition of initial customers	Positive effect due to connection to prior clients
Cross cultural studying/living experience and human resource acquisition	Positive effect on human resource acquisition due to more extensive network, and more employee friendly organizational culture such as mutual respect, fairness and work-life balance	NA
Cross cultural studying/living experience and financial resource acquisition	Positive effect on acquiring funding due to more extensive network	NA
Cross cultural studying/living experience and acquisition of first customer	Can be negative due to the tendency of not following local/traditional ways of conducting businesses	NA

Table 2 Summary of Initial Findings – *Guanxi* and Resource Acquisition

	Overseas Educated	Locally Educated
Usefulness of <i>guanxi</i>	Cutting edge technology is more important than <i>guanxi</i> ; yet <i>guanxi</i> can bring useful industry/market information, and can link to potential clients	<i>Guanxi</i> the most important component for building the business; the source of everything: information and resource acquisition
Approach in building <i>guanxi</i>	Based on shared personal interest, to make as many friends as possible without have a specific business purpose; building <i>guanxi</i> with authorities through local partners based on local practices	Shared personal interest can be the starting point, but the focus is on short/long term mutual benefit; conscious distinction on the types of <i>guanxi</i> and their respective values and conscious effort in managing them
Strategies in using <i>guanxi</i>	Use of <i>ganqing</i> (family) to acquire initial funding; identify founding partners from <i>jiaoqing</i> (childhood friends, classmates, friends of family members); also in acquiring first customers; use of <i>renqing</i> (social friends and prior colleagues) in acquiring initial employees	Use mostly <i>renqing</i> , for acquiring all types of resources. Use <i>jiaoqing</i> in some occasions: in getting business partners or initial employees, and referral to initial customers

Modes of Innovation and Links to Entrepreneurial Management in the Australian Wine Industry

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Modes of Innovation and Links to Entrepreneurial Management in the Australian Wine Industry

Abstract

The purpose of this paper is to investigate the relationships between individual dimensions of entrepreneurial orientation (EO) and three modes of innovation performance: product, process and marketing innovation performance. The data employed was sourced from a firm level population survey of the wineries across Australia in 2012. The results show that dimensions of EO have unique impact on three types of innovation performance while proactiveness and innovativeness are the leading forces. Proactiveness shows linear effect on all three types of innovation performance while innovativeness shows U-shaped relationships with all three types of innovation performance. Risk taking shows diverse effects with positive and significant effect on product innovation, non-significant effect on process innovation and a significant negative effect on marketing innovation. Competitive aggressiveness and autonomy show weak negative relationships with product innovation and no effect found on process innovation with competitive aggressiveness shows inverse U-shaped relationship with marketing innovation. This paper contributes to the limited research on the types of innovation and entrepreneurship at the firm level. The research ends with discussions and implications for both academics and practitioners.

Keywords *Product innovation, Process innovation, Marketing innovation, Entrepreneurial orientation, Australian wine industry*

1 Introduction

Entrepreneurship is regarded as an important characteristic to identify and explore opportunities (Lumpkin, Moss et al. 2011). By exploring opportunities, entrepreneurial wineries can gain first mover advantage in the market place by introducing new products, new management, new marketing strategies (Brown and Butler 1995). In strategic management and entrepreneurship literature, an entrepreneurial strategic orientation (EO) is regarded as the most established instruments for measuring firm level entrepreneurship (Rauch, Wiklund et al. 2009). A firm with EO is traditionally viewed as a firm that exhibits decision-making norms that emphasise proactiveness, innovativeness and risk-taking (Miller 1983, Morris and Paul 1987, Covin and Slevin 1989). These proactive, innovative and risk-taking behaviours of firms are revealed often in competitive strategies, business operations and products or services offerings decided by top level managers.

An aggressive strategic orientation emphasises an additional characteristic of entrepreneurial firms besides risky, proactive, and innovative decision-making practises in some research on EO (Khandwalla 1976, Covin and Slevin 1991, Zahra 1993). Integrating prior research on entrepreneurial oriented firm, Lumpkin and Dess (1996) proposed a five dimensional framework of entrepreneurial orientation (EO) for investigating firm level entrepreneurship: autonomy, innovativeness, risk taking, proactiveness and competitive aggressiveness. Although Lumpkin and Dess (1996, 2001) have argued that the competitive aggressiveness and autonomy dimensions of EO have unique characteristics and distinctly different influence on performance, dominant previous research has examined EO-performance using unidimensional EO or, initially, Miller's (1983) three dimensional EO. In recent years, research on examining individual dimensions of EO and its outcomes is called for (Tang, Tang et al. 2008, Miller 2011, Kreiser, Marino et al. 2013, Wales, Patel et al. 2013).

It is arguably acknowledged that entrepreneurship is an efficient tool in accelerating business innovation (Covin, Slevin et al. 2000, Zahra and Garvis 2000, Lumpkin and Dess 2001). By introducing innovation, entrepreneurial firms are able to survive even in hostile conditions

(Coulthard 2007). In recent studies, research has shown inconsistent relationships between EO and performance and some researchers have suggested that there are non-linear relationships between EO and performance (Tang, Tang et al. 2008, Kreiser, Marino et al. 2013, Wales, Patel et al. 2013). However, research on the impact of dimensions of EO on modes of innovation is both theoretically and empirically scarce. Therefore, studies are needed to gain additional insights on how firms can enable and effectively implement different dimensions of entrepreneurial behaviours to enhance modes of innovation performance.

In order to address the current research gaps and deepen our understanding of the relationships between EO and types of innovation, this paper aims to answer two questions: first, which modes of innovation are driven by EO? Second, does each dimension of EO contribute equally to innovation? We use the Australian wine industry to answer the above research questions since its success has been attributed to innovation and being entrepreneurial in the market place (Henderson and Rex 2012).

The paper is organised as follows; the next section elaborates on the theory, and presents hypotheses explaining the relationships between individual dimensions of EO and three types of innovation performance. Section 3 explains the research methods and designs. Section 4 analyses data and presents the results. This paper ends with contributions and implications for academics and policy makers.

2 Theory and hypotheses

Innovation has as a central objective to improve the firms' performance through acquired competitive advantage (OECD 2005). Firms which are not innovative cannot survive over time (Freeman and Soete 1997). There are many definitions of innovation (Schumpeter 1934, Sundbo 1998, Sundbo 2001, OECD 2005). Essentially, 'innovation' refers to something new that creates value in the eyes of the consumer (Sundbo, 1998). For Schumpeter (1934), innovation is a new combination of knowledge. The Oslo Manual (OECD, 2005) identifies innovation as '...the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations' (OECD, 2005, p. 46).

Innovation takes place when a business uses something new for the first time and as a result gains a benefit (Sundbo, 1998). The Oslo Manual (OECD, 2005) subdivided innovation into four types: product, process, marketing and organisational innovation. For the purpose of this paper, process and marketing innovation are going to be considered as a whole in management innovation. Product innovation, is defined as '...the introduction of a good or service that is new or significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics' (OECD, 2005, p. 48). Process innovation is defined as '...the implementation of a new or significantly improved production or delivery method. Marketing innovation is defined as '...the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing'. (OECD, 2005, p. 49).

The roots of the concept of the entrepreneurial firm can be traced back to the earlier works about strategic decision-making in strategic management literature. Mintzberg (1973) describes an entrepreneurial decision-making mode as being dominated by the active search for new opportunities as well as dramatic leaps forward in the face of uncertainty. In some similar pioneering work exploring entrepreneurially managed firm styles, an entrepreneurial firm are often characterised as risky, proactive, aggressive decision-making and innovative (Khandwalla 1976, Miller 1983). Morris and Paul (1987) describe an entrepreneurial firm as

a firm with decision-making norms that emphasize proactive, innovative strategies that contain an element of risk. These decision-making norms are reflected in the management styles of firms, as Covin and Slevin (1988) state “entrepreneurial firms are those in which the top managers have entrepreneurial management styles, as evidenced by the firm’s strategic decisions and operating management philosophies”.

In the past three decades or more, the research on established firm entrepreneurship has become a central focus of the entrepreneurship literature (Covin and Wales 2011). Researchers of strategic management and entrepreneurship, and resource based theory have placed much effort into understanding entrepreneurial behaviours in established firms (Stevenson and Jarillo 1990). EO is now regarded in the field of entrepreneurship research as the most established instrument for measuring firm level entrepreneurship.

2.1 Innovativeness and innovation performance

Innovativeness by definition contains a degree of novelty, change, creativity, differentiation, and advancement in improving activities such as production process, organisational management, marketing and relationships. Firm innovativeness represents a departure from existing practises and norms (Shane and Eckhardt 2003). Innovative oriented firms are more willing to put effects to innovative projects and are innovative in solving problems. Thus, innovativeness is a key source of new ideas and is a chief means to create differentiation, which will lead product introductions, advanced production and improved marketing strategies (Hughes and Morgan 2007, Lumpkin, Brigham et al. 2010).

Innovativeness can take the form of either an attitude to seek creative problem solving or practises to make improvements to existing process and systems (Covin and Slevin 1986, Lumpkin and Dess 1996). Accordingly, innovative activities happen along the whole product/service value chain, which can be Schumpeterian change (Schumpeter 1934) or Kirznerian change (Kirzner 1973). These innovative activities in resources, processes, and resource combinations within firms often result in higher innovation achievements (Porter 1996, Weerawardena and Mavondo 2011). As the level of firm innovativeness increases so does the investment in experiments and R&D (Nieto and Quevedo 2005). It is not uncommon to see the delay between the investment of in innovation and its pay-off (Leifer 2000). Thus, moving from low to moderate innovativeness can result in decreased innovation performance. However, as innovativeness keeps continuing, firms will harvest the benefits of innovativeness. Thus, as firm moving from moderate level of innovativeness to high level, it is expected to see a marked increase in innovation performance. Thus, it is hypothesized that:

H1a: Innovativeness has a U-shaped relationship with product innovation performance.

H1b: Innovativeness has a U-shaped relationship with process innovation performance.

H1c: Innovativeness has a U-shaped relationship with marketing innovation performance.

2.2 Proactiveness and innovation performance

Proactiveness refers to a forward-looking and imitativensess perspective, opportunity-seeking attitude, and forecasting changes in current strategies and tactics (Lumpkin and Dess 1996). On one hand, proactive firms monitor business trends to anticipate business opportunities. On the other hand, proactive firms act on these opportunities to make improvements in current products, production process and marketing strategies ahead of competition (Bateman and Crant 1993). As Venkatraman (1989) points out:

“It (proactiveness) is expected to be manifested in terms of seeking new opportunities which may or may not be related to the present line of operations, introduction of new products and

brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle.”

Advances in technology that improve production processes or update (or introduce new) final products or services need proactive firms, who are better able to scan current business environments and have the capability to forecast future environments, to adopt them first (Kreiser, Marino et al. 2013). Proactive firms actively react to market signals to analyse customers’ needs and acquire valuable resources to improve products, process or marketing strategies ahead of their competitors (Zahra and Covin 1995, Covin and Miles 1999). Proactive firms can successfully identify premium market niches and capitalise on these premium opportunities (Zahra and Covin 1995). This suggests that they are ahead of less responsive competitors in applying new market strategies, introducing new products or advance production process by proactively anticipating future market changes. Thus, it is hypothesized that:

H2a: Higher levels of firm proactiveness will positively influence firm product innovation performance

H2b: Higher levels of firm proactiveness will positively influence firm process innovation performance

H2c: Higher levels of firm proactiveness will positively influence firm marketing innovation performance

2.3 Risk taking and innovation performance

Risk-taking is typically characterized by resource commitments into ventures or projects with uncertain outcomes (Covin and Slevin 1991). Lumpkin et al., (2010) suggest these ventures may include heavy financial investments in technologies, new products and marketing development. Once opportunities are perceived, risk-taking firms are more willing to invest in ‘unclear opportunities’ with “a reasonable chance of failure” than risk-avoiding firms (Miller and Friesen 1978, Covin and Slevin 1991, Wiklund 2006). That is, risk-taking firms are less careful about resource commitments than risk-avoiding firms when facing new opportunities to launch new products, improve production process and marketing strategies.

Innovations in products, production process and marketing contain something new and uncertain, which require firms to risk potential failure (Dickson and Giglierano 1986). Thus, risk-taking fosters firm innovation in ever changing and uncertain market conditions (Hughes, Hughes et al. 2007). Firms are willing to make large and risky resource commitment. Risk-taking favours speedy decision-making and enables proactive firms to react to change quickly. A perceived opportunity could disappear after a systematic investigation but risk-taking firms are willing to invest in the opportunity without fully understanding the opportunity or being sure about the pay-offs (Tan 2001). Thus, risk taking behaviours are employed by innovative and proactive firms to evaluate and finally explore the perceived opportunities (Shane and Eckhardt 2003). Thus, it is hypothesized that:

H3a: Higher levels of firm risk-taking will positively influence firm product innovation performance

H3b: Higher levels of firm risk-taking will positively influence firm process innovation performance

H3c: Higher levels of firm risk-taking will positively influence firm marketing innovation performance

2.4 Competitive aggressiveness and innovating performance

Competitive aggressiveness refers to an intensity of effort by a firm to outperform and undermine its industry rivals in competition when a firm faces the threat of losing market share or reducing anticipated returns (Lumpkin and Dess 1996, Lumpkin and Dess 2001). It

can take the form of an aggressive response to market competition or an active combative posture to introduce new products or entering new markets, achieving market entry or securing / enhancing market position (Dess and Lumpkin 2005). That is it utilises deliberate and reactive actions taking advantage of continuous competitor assessment to strengthen the firm's competitiveness at the expense of rivals (Lumpkin & Dess 1996, Hughes and Morgan 2007).

Competitive aggressiveness can be adopted by a firm to leverage market, product and production process opportunities to get more market share from competitors (Antoncic and Hisrich 2001, Lumpkin, Brigham et al. 2010). A competitive aggressive firm uses competition strategies in unconventional ways to target rivals' weaknesses and intensively out-manoeuvre competitors while strengthening the firm's competitiveness (Covin and Covin. 1990, Lumpkin and Dess 1996). Through continuous offensive tactics, competitive aggressiveness is regarded as a prerequisite for firms targeting high growth in a market place (Covin and Covin. 1990, Zahra and Garvis 2000). These offensive tactics usually integrate innovative behaviours to beat competitors in the market place (Telfer 2001, Wiklund 2006). Thus, it is hypothesized that:

H4a: Higher levels of firm competitive aggressiveness will positively influence firm product innovation performance

H4b: Higher levels of firm competitive aggressiveness will positively influence firm process innovation performance

H4c: Higher levels of firm competitive aggressiveness will positively influence firm marketing innovation performance

2.5 Autonomy and innovating performance

Autonomy refers to the independent action of an individual or a team in an organisation in bringing forth an idea or a vision and carrying it through to completion (Lumpkin and Dess 1996, Dess and Lumpkin 2005). As suggested by previous research, the degree of autonomy varies according to the firm size, structure and industry type etc. In small and young firms, it could refer to the strong centralised leadership of the entrepreneurs (Mintzberg 1973, Miller 1983). In well-established and large firms, it often refers to the autonomy of employees in pursuing entrepreneurial opportunities (Lumpkin, Cogliser et al. 2009, Kraus, Rigtering et al. 2012).

For product and process innovations, autonomy facilitates knowledge transfer and sharing, helps generating new ideas (Lumpkin, Cogliser et al. 2009) and prevents corporate inertia that causes innovation inability (Thornhill and Amit 2001). As Hughes and Morgan (2007) suggest autonomy encourages organisational flexibility and enhances performance since it grants employees the freedom of innovation, creativity in pursuing opportunity and an environment of open-communication and self-direction. Previous research has found the freedom granted to employees motivates their efforts to contribute to firm growth and be actively involved in firm entrepreneurial and innovative projects (Burgelman 1983).

For marketing innovation, there are mixed effects of autonomy found in literature. On one hand, there is research suggesting the negatively mixed or none significant relationship between autonomy and firm performance. It is suggested in the literature that moderate amount of autonomy granted to employees increases costs of ordination, induces lack of concentration on developing competency in specific niches (Mintzberg 1979). Furthermore, high level of autonomy risks degrading corporate integration (Garvin and Levesque 2006) unless the level of autonomy is balanced with the need for integration, which is crucial to corporate entrepreneurship and performance (Garvin and Levesque 2006). Researchers like Styles and Genua (2008) even argue that autonomy is not required in entrepreneurial

activities and does not contribute to performance. On the other hand, research outcomes suggest that high level's organisation autonomy is crucial for radical innovations of organisations (Leifer, McDermott et al. 2000). Johnson (2012) differentiates autonomy into two categories, planning (low to moderate autonomy) and structural autonomy (moderate to high level autonomy) and finds that there exists a negative relationship between planning autonomy and internal corporate performance while the relationship between structural autonomy and performance is mixed according to the different stage of ventures.

Thus, it is hypothesized that:

H5a: Higher levels of firm autonomy will positively influence firm product innovation performance

H5b: Higher levels of firm autonomy will positively influence firm process innovation performance

H5c: Firm autonomy has a U-shaped relationship with firm marketing innovation performance.

3 Methods

3.1 Sample

This study comprises four main phases, a literature review, field studies, pilot tests and a mail survey. Based on a broad review of the literature, field studies were conducted before the research began. Open interviews with wine industry officials, winery owners/managers and others were used to understand in-depth the everyday realities of the Australian wine industry and to identify the main challenges that can be interpreted from the entrepreneurship perspective. The authors adopted questions measuring EO from Hughes and Morgan (2007). We pilot tested the questionnaire using students from the school of Agriculture and Wine in the University of Adelaide, to ensure the questions made sense for the wine industry. Finally, an email survey targeting the population of wineries in Australia was conducted using the 2012 Australian and New Zealand Wine Industry Directory (ANZWID) as a database, which lists 2532 registered wineries. Since 262 wineries' email addresses are not included in the database we performed a manual web search and retrieved an additional 132 email address. Thus, in total we had 2402 wineries for the email questionnaire survey.

The questionnaire was designed to be answered by winery owners, General Managers or people who have equivalent positions in wineries. We emailed the 2402 wineries at the end of July, 2012. The survey was followed by three email reminders in August, September and October of 2012 respectively. We also made follow up phone calls to wineries that responded to the survey but had not yet completed it. The survey was ended at the end of November, 2012, by then 410 wineries responded to the survey, among which 298 wineries finished the survey. Table 1 provides an overview of key sample characteristics.

Table 1: Descriptive analysis

Variable	Frequency Distribution (n=298)			Total
	Less than 5	Less than 30	More than 30	
Size (no. of employees)				
a.v	217	72	7	296a
p.v	72.8	24.2	2.3	99.3%
Age (years of				
a.v	Less than 10	11-20	More than 20	Total
p.v	68	121	109	298
Grape Crush	22.8	40.6	36.6	100%
a.v	Less than 49	50-499	More than 499	Total
p.v	166	102	30	298
	0.56	0.34	0.10	100%

Notes: ^a Missing value, a.v. absolute value; p.v. percentage value

3.2 Dependent variable

Firm innovation performance is manifested in three modes of innovation performance: product innovation, process innovation and marketing innovation. All three modes of innovation are measured using seven-point scale based on the work of (Ruef 2002, Shane and Eckhardt 2003). Process innovation and production innovation were measured using a single item while marketing innovation is measured using three items. These dimensions of innovation performance were based on perceptual measures. The choice of the perceptual innovation measures are based on the following reasons. Firstly, perceptual performance measures are commonly seen in entrepreneurship literature and research has found similar research results regardless of objective or perceptual measures (Lumpkin and Dess 2001, Rauch, Wiklund et al. 2009, Kreiser, Marino et al. 2013). Secondly, it is difficult to collect objective performance data, which could result in a lower response rate for the survey. Acknowledging that comparing a firm with its direct competitors can best tap relative firm performance (Wiklund & Shepherd 2011), the items measuring innovation performance are measured by asking the respondents to rate their winery innovation performance in process, product and marketing in comparison with what they know or believe about their closest competitors.

3.3 Independent variable

Covin and Slevin (1989) developed a nine-item scale to measure entrepreneurial posture of firms: innovativeness, proactiveness and risk-taking. Due to simplicity in data collection and data analysis, most research on EO has adopted measurement items developed by Miller (1983) and Covin and Slevin (1988). The measurement of EO using reflective measurement model is appropriate (Coltman, Devinney et al. 2008; Covin and Lumpkin 2011; Edwards 2011). The approach to measure EO using reflective-type scales developed by Hughes and Morgan (2007) is described by Covin and Wales (2011) as “attractive” and “reasonable”. Following the recommendation of Covin and Wales (2011), the survey items of five dimensions of EO were drawn from Hughes and Morgan (2007). The items measuring proactiveness, innovativeness and risk-taking contain nine items.

3.4 Control variables

Four control variables including firm age, grape crush, and number of employees were utilised in the analyses. As an agriculture industry, wine industry wins market success from heritage and provenance, which are related closely with history and age. Australia as a new world wine producer has gained market success from industrialised wine production, which lowered production cost (Halliday 1994). Grape crush is a good indicator measuring winery production quantity and winery size. The variable of tonnes crushed was measured by asking wineries how many tonnes of grapes were crushed in the 2012 vintage. Firm size was

controlled for using the total number of employees (full time equivalent) within the wine company.

3.5 Data analysis

We used one respondent in each firm to answer the questionnaire, which suggest that common method bias may have artificially inflated the regression weights of the paths in our models (Naudé, Zaefarian et al. 2014). To assess the potential impact of this bias, we conducted a latent factor test and the results suggest that common method is not an issue in the research. Table 2 reports the means, standard deviations, and correlations for the primary variables utilised in the analysis.

4 Results

We use hierarchical regression analysis to test our hypothesis. We use mean-centring procedure for the independent variables to minimize multicollinearity (Aiken and Stephen 1991). In all estimated models, the values of Variance Inflation Factor (VIF) are all below 2 suggesting multicollinearity is not an issue in our analyses (Neter, Kutner et al. 1996). Each mode of innovation performance was developed with three models: the first model with control variables only, the second model added five dimensions of EO, the third model testing the proposed curvilinear relationships. The testing results of these models are shown in Table 3.

Hypotheses H1a, H2a, H3a, H4a and H5a are about the relationships between five dimensions of EO and firm product innovation performance. Model 1 shows that firm age has a negative and significant relationship with firm market performance. We did not find significant relationships between firm size and firm product innovation performance. Model 2 shows that three dimensions of EO, proactiveness ($\beta = 0.258, p < 0.01$), innovativeness ($\beta = 0.242, p < 0.01$), risk taking ($\beta = 0.150, p < 0.05$) have positive and significant relationships with product innovation while the remaining two dimensions of EO, competitive aggressiveness ($\beta = -0.133, p < 0.1$) and autonomy ($\beta = -0.129, p < 0.1$) show weak and negative relationships with firm product innovation performance. Model 3 demonstrates a significant and positive coefficient of the squared innovativeness ($\beta = 0.092, p < 0.05$) and product innovation performance indicating a U-shaped relationship between them. Thus, Hypotheses H1a, H2a, H3a, are supported. Hypotheses H4a and H5a are not supported. The results are demonstrated in Figure 1.

Hypotheses H1b, H2b, H3b, H4b and H5b are about the relationships between five dimensions of EO and process innovation performance. Model 4 shows that the relationships between firm size, age and firm process innovation performance are not significant. Model 5 shows that only two dimensions of EO, proactiveness ($\beta = 0.244, p < 0.01$), innovativeness ($\beta = 0.177, p < 0.05$) have positive and significant relationships with firm process innovation while the remaining three dimensions of EO, risk taking competitive aggressiveness and autonomy all have non-significant relationships with firm process innovation performance.

Model 6 displays the results of the non-linear model. As shown in model 6, a significant and positive coefficient of the squared innovativeness ($\beta = 0.083, p < 0.05$) and process innovation performance indicating a U-shaped relationship between them. Therefore, Hypotheses H1b, H2b are supported while H3a, H4a and H5a were not supported. The results are demonstrated in Figure 2.

Models 7-9 display the results testing the relationships between dimensions of EO and firm marketing innovation performance as proposed by H1c, H2c, H3c, H4c and H5c. As shown in model 7, we did not find significant relationships between firm age, size and firm

marketing innovation performance. Model 8 and model 9 suggest a dominant positive effect of proactiveness ($\beta = 0.472$, $p < 0.01$) on firm marketing innovation performance and a significant but negative relationship between risk taking ($\beta = -0.115$, $p < 0.01$) and firm marketing innovation performance. Model 8 show that innovativeness, competitiveness and autonomy do not contribute significantly to firm marketing innovation performance. Model 9 shows a positive and significant coefficient of the squared innovativeness ($\beta = 0.080$, $p < 0.1$) and firm marketing innovation performance while a negative and significant relationship between competitive aggressiveness ($\beta = -0.065$, $p < 0.01$) and firm marketing innovation performance. Thus, model 9 suggests a U-shaped relationship between innovativeness and firm marketing innovation performance and an inverted U-shaped relationship between autonomy and firm marketing innovation performance. Therefore, Hypotheses H1c, H2c and H5c are supported while H3c, H4c were not supported. The results are demonstrated in Figure 3.

Table 2 Mean, Standardised Deviation and Correlation Matrix

Descriptive	Me	SD	1	2	3	4	5	6	7	8	9	10	11
1. Firm age	2.17	0.7	1.00										
2. Grape	1.54	0.6	.201	1.00									
3.	1.30	0.5	.264	.596	1.00								
4.	4.06	1.5	-0.01	.222	.189	1.00							
5.	5.45	1.0	0.05	0.03	0.05	.599	1.00						
6. Risk	4.82	1.1	-0.01	-0.01	0.00	.324	.405	1.00					
7.	3.94	1.3	0.02	.212	.230	.495	.332	.115	1.00				
8.	4.90	1.1	-0.02	0.09	-0.02	.190	.225	.268	.159	1.00			
9. Product	4.41	1.2	-0.08	0.08	0.05	.322	.318	.236	0.08	0.0	1.00		
10. Process	4.29	1.0	0.06	0.10	0.10	.325	.296	.128	.153	0.0	.488	1.00	
11.	4.48	1.0	-0.02	.134	.121	.495	.321	0.08	.304	0.0	.365	.439	1.0

SD standard deviation * $p < 0.05$; ** $p < 0.01$

Table 3 Hypotheses Testing Results

Variables	Product Innovation			Process Innovation			Marketing Innovation		
	Model	Model	Model	Model	Model	Model	Model	Model	Model
Control									
(Constant)	4.468*	4.551*	4.473*	3.894*	4.025*	3.955*	4.232*	4.501*	4.518*
Firm age	-.178*	-.174*	-.171*	.047	.060	.063	-.095	-.047	-.048
Grape Crush	.151	.139	.148	.080	.030	.038	.160	.022	.033
Employees	.070	.015	-.012	.128	.065	.040	.164	.040	.003
Independent									
Proactiveness		.258**	.238**		.244**	.226**		.472**	.465**
Innovativeness		.242**	.318**		.177**	.246**		.081	.152**
Risk taking		.150**	.143**		-.004	-.010		-.115*	-.131**
Competitive		-.133*	-.133*		-.026	-.026		.067	.058
Autonomy		-.129*	-.126*		-.038	-.036		.011	-.005
(Innovativeness (Autonomy) ²)			.092**			.083**			.080** -.065*
Model stats									
R-squared	0.017	0.170	0.184	0.013	0.128	0.143	0.025	0.261	0.281
DR -squared	0.017	0.153*	0.014*	0.013	0.115*	0.015*	0.025*	0.236*	0.021*
Adj. R-	0.007	0.147	0.159	0.003	0.104	0.116	0.015	0.240	0.256

* $P < 0.1$; ** $p < 0.05$; *** $p < 0.001$

Figure 4 the Relationships between Dimensions of EO and Product Innovation

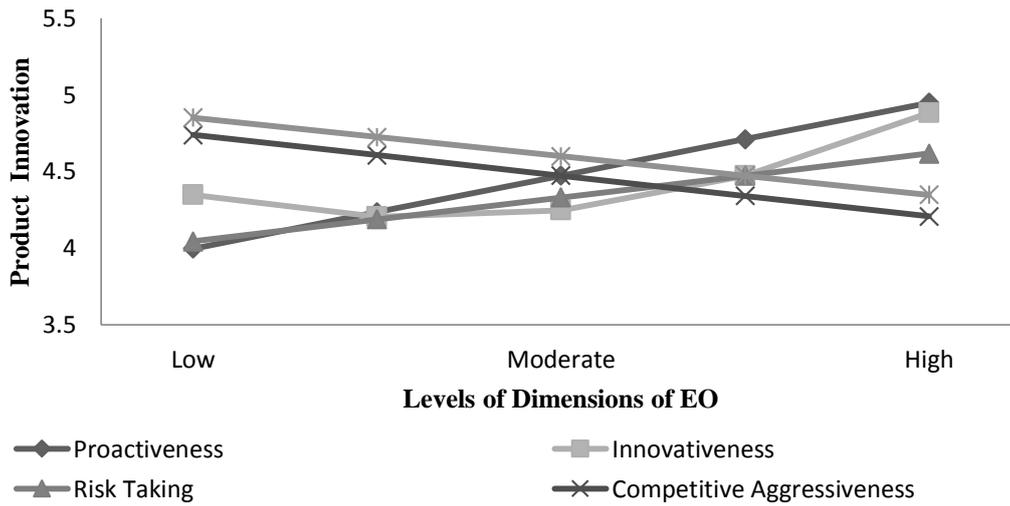


Figure 2 the Relationships between Dimensions of EO and Process Innovation

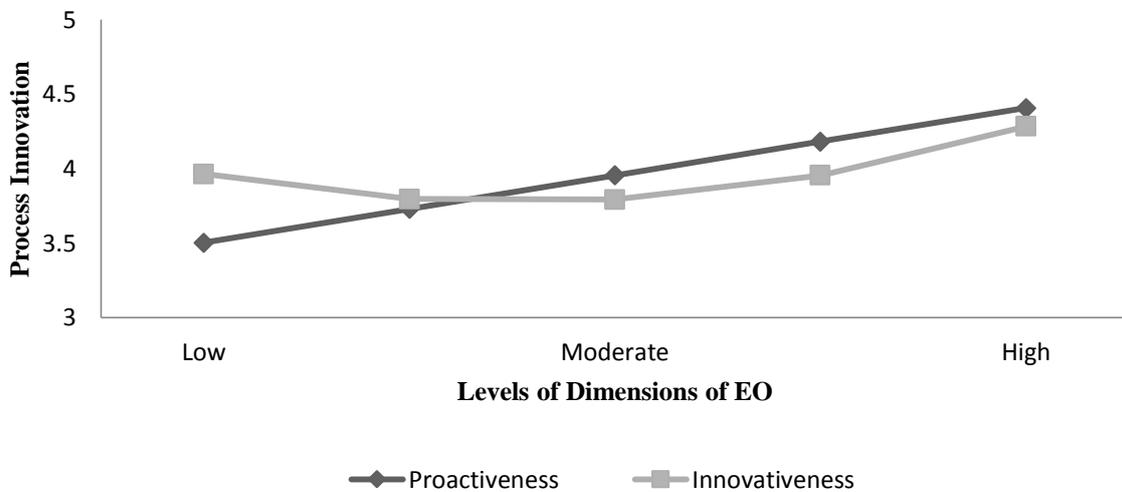
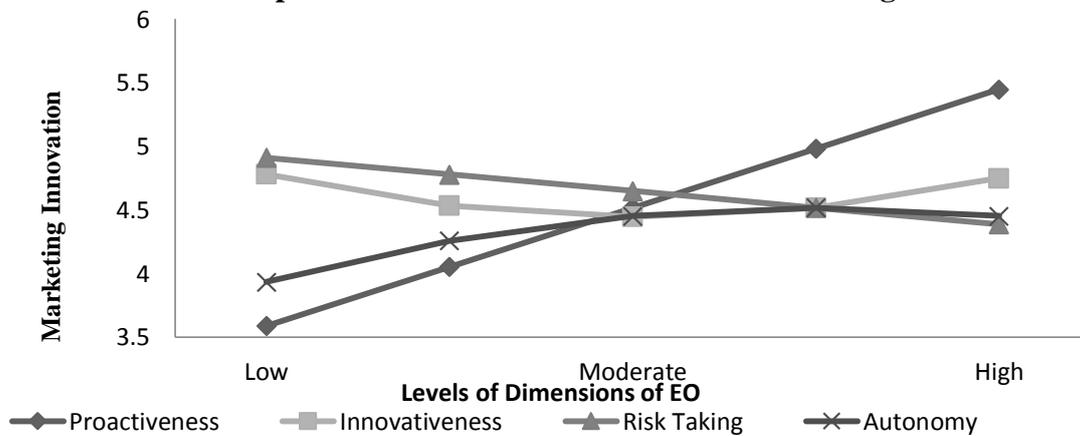


Figure 3 the Relationships between Dimensions of EO and Marketing Innovation



5 Discussion

The research examines the impacts of five dimensions of EO including proactiveness, innovativeness, risk taking, competitive aggressiveness and autonomy on three modes of innovation performance. The results suggest that dimensions of entrepreneurial orientation do not contribute equally to different modes of innovation performance. The research advances our understanding of the relationships between dimension of EO and three types of innovation performance. The research also advances the notion that one single dimension of EO can vary independently and an entrepreneurial firm does not have to endorse all five dimensions of EO to enhance innovation performance (Lumpkin and Dess 1996, Lumpkin and Dess 2001, Dai, Maksimov et al. 2013). Actually, this research shows dimensions of EO such as risk taking, competitive aggressiveness and autonomy do not or even have negative effects on certain types of innovation performance. The finding indicates that close attention is needed when leveraging EO to enhance firm innovation performance.

According to the means of variables of interest, process innovation performance is the lowest performance level between these three modes of innovation while competitive aggressiveness is the lowest dimension among five dimensions of EO. These descriptive analyses may indicate that process innovation is hard to achieve and the aggressive dimension of EO is an uncommonly used strategy in the Australian wine industry context.

Proactiveness was found to be the most important dimension of EO contributing to all three modes of innovation of interest in this research, especially for marketing innovation. Innovativeness was found the second most important dimension of EO in enhancing innovation performance especially for product innovation. These findings indicate proactiveness as market opportunity orientated and innovativeness as creative behaviours oriented (Miller 1983, Covin and Slevin 1988, Lumpkin and Dess 1996). The research also shows non-linear relationships between innovativeness and three types of innovation performance. Low to moderate levels of innovativeness negatively associates process and marketing innovation performance while only low level of innovativeness associated with product innovation performance. These research finding suggest that firms leveraging innovativeness to enhance innovation performance are suggested to have a long term or intensive innovation commitment since as innovativeness accumulates, the rapid increase of types of innovation performance will be realised.

Another interesting finding in the research is about the relationships between risk taking and types of innovation performance. The finding that risk taking only has a positive impact on product innovation but negative relationship with marketing innovation is intriguing. This finding may suggest that taking risks to commit resource is better at the opportunity pursuit stage rather than at the opportunity identification stage. Research has shown that risk taking is often leveraged by proactive and innovative firms to pursue new opportunities (Shane and Eckhardt 2003). At the same time the research shows that innovativeness has the strongest relationship with product innovation and proactiveness has the strongest relationship with marketing innovation. This can indicate that risk taking is better associated with innovative behaviours instead of proactive behaviours in the market place.

It is worth to notice that both competitive aggressiveness and autonomy have negative relationships with product innovation. The inverse U-shaped relationship between autonomy and marketing innovation performance suggest that low to moderate level of freedom granted to employees are positive to firms in pursuing market opportunities. This finding to some extent support the viewpoint that autonomy adopted in managerial practices is beneficial in generating new ideas, promoting creativity and preventing corporate inertia (Thornhill and

Amit 2001, Lumpkin, Cogliser et al. 2009). According to the research, both competitive aggressiveness and autonomy are not recommended in technology-based innovations like product and process innovations. This finding supports the viewpoint that suggests competitive aggressiveness it as an efficient instrument to deal with threats in the existing market place instead of future opportunities that usually require new resources or means-end framework (Shane and Eckhardt 2003).

The research contributes to scarce research linking dimensions of EO to modes of innovation performance by an empirical study of the Australian wine industry. The results suggest that in order to achieve higher process innovation it is probably not enough to implement EO alone and other complementary factors such as market orientation may be important (Veidal and Korneliussen 2013). The research findings may also explain why entrepreneurship research has been inconsistent in examining EO and its relationship with performance (Wiklund and Shepherd 2011).

As with any research, we acknowledge this research has limitations that point to directions for future research. Although the design of the research was based on a broad literature review and strict practical examination, the limitations of the research might influence the implication of research findings, although they do not necessarily negate the research results. Firstly, the data collected was based on an online survey and telephone interviews relying on a single respondent for a firm. Although there is a quite high email usage proportion in the Australian wine industry, over 90%, this data collection method might exclude wineries that do not have an email address and do not like to respond to phone interviews. Future research should adopt diverse ways of data collection to gather comprehensive responses from multiple respondents to improve data validity.

Secondly, the measurement instruments of the research were derived from prior research in industries other than the wine industry. Although substantial effort was placed into piloting the questionnaire, these efforts were focused on understanding the words and industry peculiarities. The internal consistency of factors might be influenced, although it is not a particular concern in this research. Future research could validate these survey questions specifically for the wine industry and be based on large scale data collection to validate data internal consistency. Thirdly, the measurements of variables in the research are based on self-reported, cross-sectional data, which may reduce the reliability of these measures. Future research could use a research design to collect longitudinal and objective data to examine the relationship between EO and its important feedback effects.

In conclusion, we hope this research directs greater attention to the varied influences of dimensions of EO on modes of innovation performance in entrepreneurship and strategic management literatures. This work offers a first attempt to advance understanding of the relationship between EO and modes of innovation performance. Different industry or company characteristics require unique innovation types; therefore, investigation of dimensions of EO and their relationship with modes of innovation performance is worthwhile scholarly endeavour. More research needs to be conducted to gain more insights.

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The Task Conflict-Business Plan Performance Relationship: A Field for a Brighter Side of Narcissism in the Tension Field of Capability, Perceived Self-effectiveness and Overconfidence

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THE TASK CONFLICT–BUSINESS PLANNING PERFORMANCE RELATIONSHIP:

A FIELD FOR A BRIGHTER SIDE OF NARCISSISM IN THE TENSION FIELD OF CAPABILITY, PERCEIVED SELF-EFFECTIVENESS AND OVERCONFIDENCE

A B S T R A C T

Drawing on conflict theory, we hypothesize that in early-stage entrepreneurial teams, task conflict contributes to superior business planning. Drawing on theories originating in social psychology, we hypothesize that the link between task conflict and business planning performance is reinforced by a certain level of narcissism in an entrepreneurial team, where the narcissism has at its root entrepreneurial capability and perception of self-effectiveness but not if it is based on overconfidence. The findings of our experimental longitudinal study on 66 teams of entrepreneurship students support our assumptions and provide meaningful implications for research and practice.

INTRODUCTION

The early stage of business creation requires the accomplishing of creative and complex tasks including conceiving the idea of the new venture and developing a viable proposition for it, an activity that culminates in the creation of the business plan. Accordingly, business plans reflect the business model and describe how an entrepreneur or entrepreneurial team “will create an organization to exploit a business opportunity” (Shane & Delmar, 2004: p.768). Goal setting theory (Locke & Latham, 1990) asserts that business planning prior to the implementation of a business model helps people to achieve goals by involving them in decision-making processes, enabling efficient management of the supply and demand of resources, and partitioning the business project into smaller tasks (Shane & Delmar, 2004).

New venture projects are typically undertaken by teams (Gartner et al., 1994), particularly when they involve complex tasks, as a start-up project often does. In such settings, hitting project milestones will require the team members to frequently interact in a process usually marked by powerful social dynamics, such as the heated discussions that are often a feature of decision making (Blair et al., 2008). Drawing on conflict theory (De Dreu & Weingart, 2003) we will show that in such a situation, task conflict positively influences performance. Moreover, a recent meta-analysis by De Wit, Greer, & Jehn, (2012) indicates that intervening characteristics of team members play a significant role in the quality and strength of the task conflict–team performance link. However, research on the moderating function of entrepreneurial personality on the task conflict–team performance link is limited, despite an increase of research on the individual in (entrepreneurial) teams (e.g., Kristof-Brown et al., 2005).

Just recently, Grijalva and Harms (2014) called for more research on narcissism in the field of entrepreneurship since “creating a firm may be indicative of narcissistic tendencies” (Grijalva & Harms, 2014, p. 121). The above research suggests narcissists are skilled at persuading investors and other stakeholders because they not only have the skills required to *start* businesses under certain circumstances, but are also motivated, and prepared to express that. Our study addresses this aspect and introduces narcissism as an intervening variable amplifying the positive link between task conflict and team performance in terms of creative business planning performance.

Furthermore, there appear to be different factors affecting narcissism that determine the extent of its influence on team processes (Maccoby, 2000). We find that narcissism that is grounded primarily in a combination of profound (entrepreneurial) understanding, and a justifiable and substantial conviction of effectiveness (Hiller & Hambrick, 2005) is likely to

support a team's business planning process but only if narcissistic entrepreneurial team members are not overconfident in regard to their skills.

With our study we contribute to the research stream on entrepreneurial teams and associated processes in terms of task conflict in teams (e.g., Lim et al., 2013), early-stage business planning, and associated outcomes in terms of business planning performance. Moreover, we reveal a brighter side of narcissism, a trait traditionally considered undesirable and recently debated controversially in both academic and practitioner articles (Engelen et al., 2013), by putting it into a context where it can flourish and spur positive early-stage entrepreneurial team dynamics. Finally, we add to the research on narcissism and its contribution to a finer-grained examination of task conflict and team performance.

The paper proceeds as follows: The following section clarifies the task conflict–business planning performance relationship, discusses the social-psychological brighter side redefinition of narcissism⁵⁹ that is especially useful in the context of early-stage creative business planning. The same section then proposes the conditions under which this brighter side might reveal itself even more. We proceed by explaining the operationalization of our sample and the conceptualization of the variables in the method section before presenting and discussing the results of our study. Finally, we close by summarizing the implications of our study for theory and research, outline its limitations, and propose areas for future research.

THEORETICAL FRAMEWORK AND HYPOTHESES

Framing the Task Conflict-Business Planning Performance Link

Task conflict, which is characterized by the tendency of a team to analyze and discuss an issue at length to elicit multifaceted views on a certain issue, enhances the effectiveness and innovativeness of the team work outcome (De Dreu & West, 2001). Business planning in terms of a complex task environment provides a good basis for evolving the stimulating side of task conflict (De Dreu & Weingart, 2003; De Wit et al., 2012). Business planning is a complex non-routine task comprising the identification of a business opportunity, generating an appropriate idea on how to exploit that opportunity and developing and planning the business to realize that idea. The process permits the analysis of complex activities affected by multiple interacting factors (Shane & Delmar, 2004). In order to address the issue of planning a business appropriately, having many divergent opinions makes it possible to access beneficial sources of information that may be important in establishing an organization properly in terms of providing the business model with competitive capacity (see the meta-analysis by Brinckmann et al., 2010). Without adversarial debates that stimulate cognitive conflict in the team, the team is less likely to be able to collect the large volume of information, creative ideas, and knowledge that will enhance the quality of decision making (Olson et al., 2007) and thus the development of a merchantable product. Accordingly, we hypothesize:

H1. Task conflict positively affects team performance in terms of business planning performance.

⁵⁹ This kind of narcissism is also referred to as normal or healthy narcissism.

Narcissism as an Amplifier of the Task Conflict-Business Planning Performance Link

We will next introduce the trait of narcissism as a moderating factor in the task conflict–business planning performance relationship.

During early business stages, the entrepreneurial context can be delimited by its demanding and dynamic characteristics that offer an opportunity to experience self-determination and self-fulfillment, and demonstrating authority and competence on the part of the entrepreneur or the entrepreneurial team, respectively. As a result, someone becoming an entrepreneur is quite likely to attract attention in their social environment: an audience that will include future stakeholders (Carter et al., 2003). Narcissistic characteristics are associated with motives such as a need for achievement (Morf & Rhodewalt, 2001), a need for power (Carroll, 1987), a need for public attention, recognition, and admiration and a desire for social influence (Brunell et al., 2008). All of these motives can be given free rein in a dynamic, challenging, and influential entrepreneurial setting that attracts individuals exhibiting narcissism, as predicted by person–environment fit theory (Carter et al., 2003; Kristof-Brown et al., 2005; Maccoby, 2000; Mathieu & St-Jean, 2013). Examples of narcissistic needs that might be met during business creation are reinforcing rewards in the form of feedback from investors, stakeholders and other supporters of the idea. Recent empirical evidence confirms that the prevalence of narcissism among entrepreneurs is quite high which indicates the attraction of narcissists to entrepreneurial environments (Mathieu & St-Jean, 2013). Accordingly, Grijalva and Harms (2014) in their call for more research on narcissism in management and related fields suggest that narcissists are typically attracted by entrepreneurial environments matching their desire to make their actions visible, and in practice, they often successfully found organizations.

Despite its bad reputation in the literature narcissism has been redefined by social psychological approaches suggesting a brighter side of the phenomenon when being put into adequate environments (Kristof-Brown et al., 2005; Maccoby, 2000). In line with the social-cognitive dynamic processing approach (Morf & Rhodewalt, 2001) and the argumentation above, Goncalo et al. (2010) suggest that narcissism may positively support the creative task resolution process essential for innovative business planning, especially in team settings with more than one narcissist in the team. Presumably, narcissists thrive in the presence of other individuals in the team who score high on narcissism, causing them to stand their ground as an opponent or at least act as devil’s advocate. This offers the opportunity to think things through properly and consider the issue from many perspectives without unquestioningly accepting dominant opinions, thereby enhancing the quality of problem solving and thus the quality of the conceptualization of an idea. Drawing on the argumentation above, we hypothesize:

H2. The greater the level of narcissism in a team, the more positive will be the relationship between intra-team conflict and business planning performance.

Incorporating Entrepreneurial Capability, Perceived Self-effectiveness and Overconfidence

In the next section, we will demonstrate that the benefits of narcissism only take full effect when based on capability and a self-image of entrepreneurial effectiveness of the team; while overconfidence does not impact the benefits of the team’s narcissism at all.

From a human capital theory perspective, entrepreneurial knowledge and ability are essential for the identification of promising opportunities and the elaboration of an

appropriate business model. That is because knowledge and ability increase effectiveness and efficiency in the process of developing a business (Mincer, 1974). In this sense, knowledge and ability are resources enabling individuals to control their (entrepreneurial) behavior and channel it toward a desired end (Wiklund & Shepherd, 2003). The development of a business model would be an example of just such an end. Maccoby (2000) pointed out that skills are at the root of the differentiation between dark- and brighter side types of narcissism. Normal narcissists profit from their own capability, whereas destructive narcissists are unable to accurately assess their capabilities, a failing that prevents them from developing and utilizing their capabilities appropriately and effectively. Thus, we hypothesize:

H3. The greater an entrepreneurial team’s capability, the stronger will be the positive moderation effect of a team’s narcissism on the task conflict–business planning performance link.

Perceived self-effectiveness refers to the level of belief a person has in their own ability, and affects a person’s willingness and ability to adapt to the demands of a challenging (entrepreneurial) task (Pulakos et al., 2002). The theory section above included an outline of the moderation effect of knowledge and noted that normal narcissists are capable of utilizing their self-belief, or perceived self-effectiveness, and their skills to generate positive outcomes (Maccoby, 2000). It follows that healthy narcissists convinced of their own ability (i.e., the perceived effectiveness of their own skills) would exhibit a positive attitude beneficial to team processes (Hiller & Hambrick, 2005).

H4. The greater an entrepreneurial team’s perceived self-effectiveness, the stronger will be the positive moderation effect of a team’s narcissism on the task conflict–team performance in terms of the business planning performance link.

Overconfidence is defined as an overestimation bias relating to a person’s performance of a task (Moore & Healy, 2008) based on self-enhancing cognitive shortcuts rather than deep self-reflection (the latter would result in a generally realistic self-evaluation) (Sedikides et al., 2007). Overconfidence has been considered a characteristic typically associated with narcissism in terms of a personality disorder (Grijalva & Harms, 2014). Research suggests that the state of health of a narcissist—and thus accurate self-assessment and productivity—is dependent on the self-enhancement tendency of the narcissist that is connected to the level of overconfidence (Taylor et al., 2003). This finding indicates there are two kinds of narcissists: those who overestimate their skills due to self-enhancement processes, and those who do not overestimate their skills and are able to exploit their capabilities accordingly. Thus, we do not hypothesize that the imbalance between entrepreneurial capability and perceived self-effectiveness (i.e., overconfidence) enhances the moderation effect of narcissism on the task conflict–business planning performance link. The hypothesized model is depicted in Figure 1.

Insert Figure 1 about here

METHOD

Sample and Data Collection

We conducted a longitudinal quasi-experimental study running from November 2012 until February 2013 involving 132 advanced students of economic sciences (37.1% female), aged

between 20 and 37 years ($M=23.73$; $SD=2.82$), attending the elective major course in entrepreneurship at a university in Germany. Since our study involved the creation of a business idea and its conceptualization through presenting the business model in a business plan, the setting seemed appropriate, given that entrepreneurship students are more likely to start a business than are other students (e.g., Souitaris et al., 2007).

We opted to implement a quasi-experimental design to guarantee internal validity. Moreover, we decided to randomly assign the participants to teams in order to reduce distortions from the effects of variables beyond those of interest in our study (Kirk, 2013). We also applied a longitudinal approach to allow for the development of team processes requiring time to unfold. Particularly in the case of personality in teams, a longitudinal design is the most appropriate since traits only come into effect after some period of team tenure (Bell, 2007). Finally, the longitudinal setting allows for better examination of causality. The students were randomly assigned to 66 teams of two. We controlled for the effects of team size and exclusively focused on teams of two for two reasons. First, research shows that entrepreneurial teams tend to be rather small (Zolin et al., 2011), with the majority of German startups involving two members (German Startups Association, 2013). Second, according to social identity and categorization theories, team members in teams of more than two may tend to form coalitions when visions of the definition of the goal or on how it might be met diverge. Such coalitions may confound the effects of task conflict (Stewart et al., 2005).

While investors will often insist on assigning individuals to founding teams as a condition of investment, in the real business environment many joint entrepreneurial initiatives are started by acquaintances. We can reduce concerns pertaining to reduced generalizability based on the random assignment on the grounds that a correlation analysis between acquaintance and business planning performance found it to be non-significant ($r=-.04$, n.s.), indicating that teams of acquaintances do not produce results differing from those of teams of strangers. To guarantee the comparability of the results, all teams were assigned the same task, which was to develop a profitable business idea in the mobile business market and draft a business plan for that idea. We opted for a task with a large degree of freedom in the innovative and fast-moving mobile market in order to prompt creative thinking and problem-solving in the process of creating a business plan. To make the task as real as possible and to motivate the students, the teams were informed that their business plans would be evaluated by angel investors and that they were expected to convince them to invest in their business ideas, and further, that such investment was a real possibility. The early stages of the course included introductions to the topic of mobile business and to producing a business plan. The students received credit points at the end of the course awarded according to their level of achievement.

Measures, Aggregation and Validity

Task conflict. Team task conflict was captured by Jehn's well-known intragroup conflict scale (Jehn, 1995; recently applied in e.g., Bradley et al., 2012). The participants responded to four questions using a 7-point Likert scale. A sample item reads, "How frequently are there conflicts about ideas in your work unit?"

Business planning performance. In order to avoid common-method and common-source bias, and being aware that self-evaluations of highly narcissistic individuals are especially prone to being self-serving and thus to positive bias (Campbell et al., 2000), we did not capture the students' subjective evaluations of their performance to determine the dependent variable. Instead, we asked ten angel investors to evaluate the business plans, and ensured that two angel investors evaluated each plan. Business planning performance was

conceptualized as the result of a due diligence investigation of the planned business. Due diligence is a process that discloses and encompasses several critical factors that matter for an organization and its functionality and is commonly used in the process of investment decisions (MacMillan et al., 1985). Following MacMillan et al. (1985), the angel investors in this study used a 7-point Likert scale to evaluate five aspects of the business plan: the product or service, team experience, team identity, the characteristics of the market, and financial aspects. These evaluations were combined to form an index of business planning performance.

Narcissism. Narcissism was measured with a German 16-item short version of the well-established Narcissism Personality Inventory (NPI; Ames et al., 2006; Raskin & Hall, 1979; German version: Schütz, Marcus, & Sellin, 2004). The inventory is intended to provide an economical measure of normal narcissism. Participants addressed the items according to a forced-choice item design in which one statement indicating narcissism is compared to a second statement that does not indicate narcissism. A sample item indicating narcissism reads, “I really like to be the center of attention.”

Entrepreneurial capability. At the end of the semester, the students were tested with a task testing their knowledge and application ability in entrepreneurship. The task was then scored by an impartial evaluator with expertise in entrepreneurship topics.

Perceived self-effectiveness. The last survey included an item requesting the students evaluate their own application knowledge in entrepreneurship, asking them, “To what extent are you able to evaluate practical entrepreneurial cases in terms of the respective core aspects?” To facilitate the evaluation of their own entrepreneurial ability the students used a ten-point Likert scale ranging from “0 to 10%” to “91% to 100%”.

Overconfidence. We conceptualized the overconfidence measure as the difference between self-evaluation regarding entrepreneurial capability and actual performance in the entrepreneurship transfer knowledge task. In doing so, the overconfidence score was created by subtracting the scores of the transfer knowledge task from the scores of the self-evaluation.

Finally, we included three control variables. We controlled for team age (using the team mean) since the performance in the business plan may also depend on age-related tacit experience accumulated as life experience (Honig & Karlsson, 2004). Hence, we controlled for gender (percentage of women in a team) as narcissism has been found to be less prevalent in women (Foster et al., 2003). Finally, we controlled for work experience (using the team mean) as it may co-vary with business planning performance (Honig & Karlsson, 2004).

Since task conflict was measured through the team members’ perceptions of it in the teams, we evaluated interrater agreement before aggregating the data. Owing to good levels of interrater agreement for team task conflict ratings (mean r_{WG} score of .84; ICC(1)=.39; ICC(2)=.84), the data indicate intragroup consensus (LeBreton & Senter, 2008). This result suggests that using the mean of the team members’ ratings to operationalize a team’s task conflict is a reasonable course of action ($M=1.96$; $SD=.67$).

The angel investors evaluating the business plans were assigned the plans at random and, as mentioned above, two angel investors evaluated each business plan. The consensus between the angel investors (mean r_{WG} score of .90; ICC(1)=.23; ICC(2)=.75) implies that the mean of the two raters’ scores ($M=3.82$; $SD=.67$) is a reasonable way to capture business planning performance.

In our theory section, we highlighted how a team's business planning performance benefits from narcissism only if the team features more than one narcissistic personality (Goncalo et al., 2010). Therefore, we captured narcissism in terms of the level of narcissism of the team member scoring lower on this trait (see Kozlowski & Klein, 2000 for a thorough review of the various composition variables). The concept suits our study context better than the alternative of capturing the team's mean narcissism score, as that would generate an equally high mean when one team member scores very low on narcissism and the other team member very high, and when both team members exhibit moderate levels of narcissism. This would distort the results because as already explained, we deduced from theory that the two situations would cause different effects. Accordingly, we applied the same procedure to our moderating moderator variables entrepreneurial capability ($M=.66$; $SD=.23$), perceived self-effectiveness ($M=.60$; $SD=.15$) and overconfidence ($M=-.22$; $SD=.20$) since these moderating moderators refer to the team-level in a similar way.

Regarding validity and reliability the accuracy of the measurements was supported by internal consistencies for the two reflective constructs: team task conflict and narcissism (Cronbachs α : .92 for task conflict and .74 for the NPI at the individual level). Since business planning performance was captured as a formative index, evaluating internal consistency was not appropriate. Additional support for the applicability of the data is drawn from a series of confirmatory factor analyses. The fit of the task conflict model was appropriate (CFI=1.00, SRMR=.00, RMSEA=.00) and the fit values of the narcissism construct were also adequate (CFI=.99, SRMR=.06, RMSEA=.01).

We do not expect significant distortions resulting from common-method bias for several reasons. First, the independent and dependent variables were gathered from different sources: While the student teams reported on their levels of task conflict, the performance of the business plan was evaluated by the angel investors. Second, all three variables were measured at different points in time. Third, team members rated their own levels of narcissism (the individual-level aspect) on the one hand and were asked to rate their team's levels of task conflict (the team-level aspect) on the other hand. The different levels of aggregation and the different kind of aggregation at the team level (minimum vs. mean) imply the results will be relatively unaffected by common-method variance. This assumption is underlined by the non-significant relationship between the independent variable, task conflict, and the moderator, narcissism ($r = -.16$, n.s) as a correlation between these two variables could be assumed if common-method variance were an issue. The correlations between the moderating moderators and the independent variable task conflict, and the correlation with the moderated moderator variable narcissism were also non-significant, further supporting the claimed validity of the model. Tests for multicollinearity indicated that it was not an issue in our data.

RESULTS

Having tested the applicability of our data, we can move on to evaluating the hypotheses. The descriptives at the team level are displayed in Table 1.

Insert Table 1 about here

We conducted a hierarchical regression analysis to test our hypotheses. The results support the hypothesized main (H1), moderation (H2) and moderated moderation (H3 and H4) effects. In Model 1, we tested the effects of the three control variables. They accounted for

only 2% of the variance in business planning performance, which warranted testing the hypothesized effects in the next models. None of the control variables exerted a significant effect. In Model 2, the simple effect of task conflict on business planning performance was added and proved significant ($\beta=.21$; $p<.05$), which supports H1. The inclusion of the direct effect significantly increased the variance explained in business planning performance to 7%. Adding the simple effect of narcissism in Model 3 increased the variance explained to 8%. The addition of the two-way interaction effect of narcissism and task conflict (Model 5) led to a significant increase in R square and 20% variance explained. The associated two-way interaction effect was significant as predicted ($\beta=.27$; $p<.05$), which supports H2. Finally, adding the three-way interaction effects (model 7) resulted in a significant increase of R square as well resulting in 45% variance explained. The significance of the three-way interaction effects of task conflict x narcissism x entrepreneurial capability ($\beta=.35$; $p<.05$) and task conflict x narcissism x perceived self-effectiveness ($\beta=.27$; $p<.05$) together with the non-significance of task conflict x narcissism x overconfidence ($\beta=.25$; *n.s.*) support our hypotheses H3 and H4. The results of the hierarchical regression analysis are presented in Table 2.

 Insert Table 2 about here

To investigate the nature of the moderated moderation effects we conducted a slope difference test for the three-way interactions of task conflict x narcissism x entrepreneurial capability and task conflict x narcissism x perceived self-effectiveness⁶⁰ (Dawson & Richter, 2006). We used a slope difference analysis to test the joint effect of three independent variables on a dependent variable and to indicate whether the gradients representing the different levels of manifestation of the moderating moderator variable (as depicted in Figures 1 and 2) differ significantly. This helps to refine insights into the moderated moderation. With regard to the moderating moderation effect of entrepreneurial capability (H3), we hypothesized that the moderating effect of narcissism on the task-conflict–business planning performance link becomes stronger at high levels of entrepreneurial capability. The slope depicting the respective function of the task conflict function increases when narcissism is at a high level and decreases when the level of narcissism is low ($p<.01$). Under conditions of low entrepreneurial capability the slope is non-significant. The slope analysis supports our Hypothesis 3 according to the significance at higher levels of entrepreneurial capability even if the three-way interaction is not significant at lower levels of entrepreneurial capability.

We found the same pattern for the perceived self-effectiveness variable indicating that the task conflict function works when perceived self-effectiveness is high in terms of an increased slope gradient when the team is highly narcissistic, while the slope gradient decreases when the narcissism level is low ($p<.001$). The same pattern was evident when perceived self-effectiveness was low; the slope increases in the presence of high levels of narcissism and decreases when levels of narcissism are low ($p<.10$). Thus, our hypothesis H4 was supported.

The moderated moderation effects on several levels of the manifestation are displayed in Figure 1 and 2 (high levels of manifestation of the moderating moderator variable are defined

⁶⁰ Since the three-way interaction of the task conflict function regarding the moderated moderation effect of overconfidence was found to be non-significant, as predicted, we excluded this three-way interaction from further analysis.

as one standard deviation above the mean level and low levels of manifestation are defined as one standard deviation below the mean level).

Insert Figure 1 and 2 about here

DISCUSSION

The current improves the understanding of the beneficial impact of narcissism on the task conflict-business planning performance link, revealing a brighter side of the phenomenon under certain circumstances. We found that the positive and significant link between task conflict and business planning performance (Hypothesis 1) is enhanced by narcissism (Hypothesis 2). In addition, we also found that the brighter side of narcissism is especially supported when entrepreneurial capability and perceived self-effectiveness are reasonably aligned. However, if capability and perceived self-effectiveness are not aligned, the team member may be hampered by overconfidence. A remarkable finding is that narcissism is related neither to business planning performance ($r=.10$, n.s.) nor to task conflict ($r=-.16$, n.s.). The absence of a link between narcissism and task conflict might seem counterintuitive. Narcissists might be assumed to spark heated debate and cause conflict because they are focused on promoting their own ideas and fulfilling their own needs, and in ways that involve rather provocative behavior. However, our results indicate that narcissists are not a source of conflict, but instead seem to *use* task conflicts and *manipulate* the associated social dynamics and debates to steer the business creation project toward a positive outcome.

The findings offer some implications for future research. First, our results indicate that business planning performance, an under-researched performance measure at the very heart of early-stage entrepreneurship, which is associated with creative thinking, has different antecedents than other kinds of performance, which may result from more routine team tasks for example (De Wit et al., 2012). We therefore suggest that research should closely examine the antecedents of business planning performance and differentiate the various kinds of team performance. Finally, our findings indicate that the special trait of narcissism guides and stimulates the process of task conflict, thus facilitating its positive impact on creative team work outcomes in terms of business planning performance, especially when narcissism is based on productive features in terms of a team's entrepreneurial capability and perception of their own effectiveness. The findings contrast markedly with the long tradition of negative findings on narcissism and its impacts in the general management literature (see Campbell et al., 2011 for a review on narcissism in organizational contexts). Contrary to the research tradition viewing narcissism as an undesirable trait, it may be worthwhile directing research further in the direction of the brighter side of narcissism, especially in terms of its influence on team processes and associated social dynamics and outcomes.

The current research has implications for practice in that it adds credence to the literature on the positive relationships and effects of task conflict on work outcomes in early-stage founding teams. In everyday business terms, this means that conflicts should not necessarily be suppressed immediately. Particularly during turbulent and creative periods (e.g., early business creation stages, and those of strategic renewal, corporate venturing, and innovation), conflict actually appears to boost innovation and problem solving. In situations of uncertainty, high risk, or crisis (which are typical of the early stage of business creation but also occur when an organization is more mature) strategic planning or restructuring processes in teams may be enhanced by creating teams with members demonstrating extreme traits,

including narcissism. Practitioners (e.g., HR professionals or investors) should concentrate on differentiating between very skilled candidates who believe in their own abilities and those whose self-belief is just a pretense. The former should probably be offered training or mentoring support to ensure their capability matches their self-belief. Accordingly, investors and potential cofounders need not be deterred from recruiting strong characters with narcissistic traits.

As with all research, our study is limited in certain respects, and thereby offers potential new approaches for future comparable research. First, we studied entrepreneurship student teams for reasons of internal validity. We aimed to examine the early stages of business creation and to acquire an understanding of processes occurring during the preparatory stages of entrepreneurship. Students make for a good sample because their participation in an entrepreneurship major course suggests that they are quite likely to start their own businesses (Souitaris et al., 2007). Moreover, we assume that the psychological phenomena (personality and conflict processes) studied are fundamental to all human beings, and therefore, we expect our student sample not to differ from a sample of the general population in terms of the psychological variables examined (see Welpe et al., 2012). Although we consider our approach involving sampling entrepreneurship student teams to be very appropriate and do not expect different results when sampling real nascent entrepreneurs, as discussed in the method section, future research might seek to replicate our findings in a study with nascent entrepreneurs. A qualitative research approach could be productive here. Furthermore, our small sample size is in line with other studies conducting research on the subject of teams and their processes and outcomes (e.g., Amason, 1996). However, examining a sample involving more teams might uncover non-significant and hidden relationships. Finally, our research focuses on two-member teams, which, as explained in the methods section, helped us to avoid distortions. However, future research might choose to address issues including coalition building by analyzing processes in larger teams.

In sum, the current research offers insights into the task conflict–business planning performance link in early-stage entrepreneurial teams. Our findings should encourage further exploration of team personality as the source of intervening effects and the conditions under which these traits function in processes occurring in entrepreneurial teams, such as conflict and its impact on work outcomes of entrepreneurial teams, which may be relevant for team and personality researchers in entrepreneurship.

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APPENDIX

TABLES

Table 1

Means (M), Standard Deviations (SD), and Correlations (Aggregated/Team Scores)

	M	SD	1	2	3	4	5	6	8	9
1. Age (years, teams' mean)	23.73	1.83	-							
2. Gender (% of women in the team)	37.12	34.32	.03	-						
3. Work experience (years; teams' mean)	2.63	2.11	.34	.10	-					
4. Intra-team task conflict (teams' mean)	1.96	.67	.20	-.14	.13	-				
5. Narcissism (teams' minimum)	.26	.16	-.11	-.08	.11	-.16	-			
6. Entrepreneurial capability (teams' minimum)	.66	.23	-.29*	-.15	-.07	.06	.09	-		
7. Perceived self-effectiveness (teams' minimum)	.60	.15	-.03	.01	.14	-.01	.10	-.04		
8. Overconfidence (teams' minimum)	-.22	.20	.27*	.07	.15	.02	.01	-.62***	.48***	-
9. Business planning performance (teams' index)	3.82	.79	-.14	.06	-.03	.16	.08	.04	.14	-.09

Notes: n = 66 teams.

* $p < .05$, two-tailed

** $p < .01$, two-tailed

*** $p < .001$, two-tailed

Table 2

Hierarchical Regression Results (Dependent Variable: Business Planning Performance)

	1	2	3	4	5	6	7
Age							
Gender (% female)	-.14	-.18	-.17	-.13	-.12	-.18	-.10
Work experience	.07	.10	.11	.10	.11	.17	.29*
Intrateam task conflict	.02	.00	-.02	-.04	-.10	-.12	-.20
Narcissism		.21*	.23*	.25*	.25*	.35**	.28*
Entrepreneurial capability			.12	.12	.14	.12	.12
Perceived self-effectiveness				-.19	-.19	-.23	-.33*
Overconfidence				.27+	.27+	.18	.23
Intrateam task conflict x narcissism				-.31	-.32+	-.21	-.26
Intrateam task conflict x entrepreneurial capability					.27*	.45**	.67***
Intrateam task conflict x perceived self-effectiveness						-.28	-.56*
Intrateam task conflict x overconfidence						.30+	.42*
Narcissism x entrepreneurial capability						-.18	-.29
Narcissism x perceived self-effectiveness						.16	.19
Narcissism x overconfidence						-.21	-.24
Intrateam conflict x narcissism x entrepreneurial capability						-.12	-.05
Intrateam conflict x narcissism x perceived self-effectiveness							.35*
Intrateam conflict x narcissism x overconfidence							.27*
Degrees of freedom	3,62	4,61	5,60	8,57	9,56	15,50	18,47
R Square	.02	.07	.08	.13	.20	.36	.45
F	.49	1.07	1.02	1.10	1.58	1.86	2.16
Change in R square		+			*	+	+

Notes: n = 66 teams. All predictor variables are z-standardized. Entries represent standardized regression coefficients.

- + p < .10
- * p < .05
- ** p < .01
- *** p < .001

FIGURES

Figure 1

Overview of Research Model

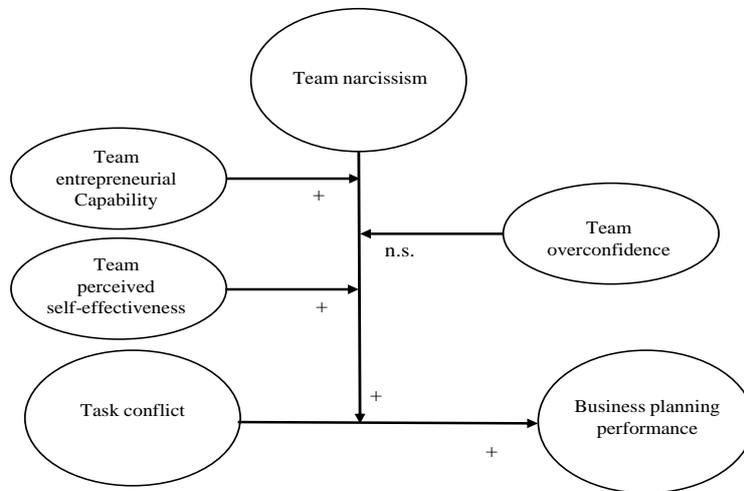


Figure 2 and 3

Visualization of the Moderated Moderation Effects

Figure 1. Three-way interaction: narcissism versus entrepreneurial capability

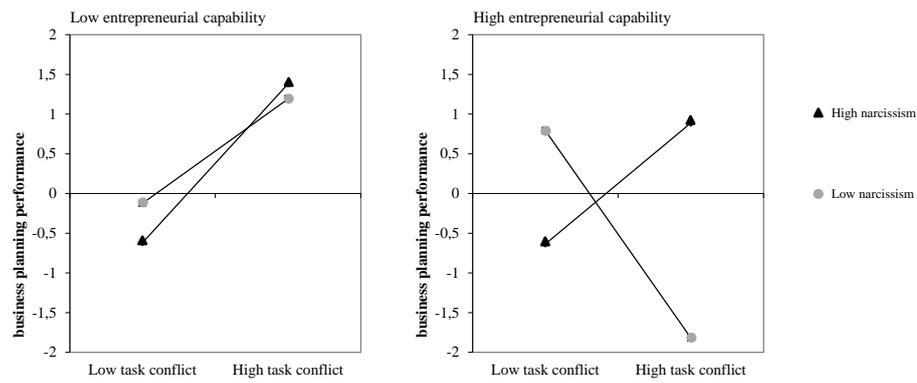
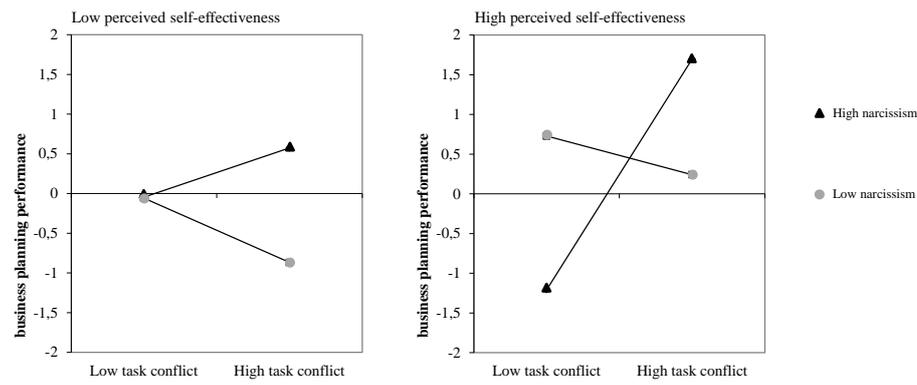


Figure 2. Three-way interaction: narcissism versus perceived self-effectiveness



Linking Factual and Perceptual Incongruence Perspectives regarding the Internal Environment for Corporate Entrepreneurship to Positive Affect and Opportunity Identification

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Linking Factual And Perceptual Incongruence Perspectives Regarding The Internal Environment For Corporate Entrepreneurship To Positive Affect And Opportunity Identification

ABSTRACT

Our study contributes to understanding the link between the internal environment for corporate entrepreneurship and middle management's entrepreneurial activity and enhances the seminal model of Hornsby et al. (2002) in two ways. First, we argue that middle management's positive affect is an important intervening variable. Second, we include the incongruent internal environment perceptions between middle and top management as an additional independent variable that complements the absolute level of organizational support for corporate entrepreneurship. Data from 193 middle and top managers shows that both independent variables have a partially mediated relationship with middle management's business opportunity identification.

Introduction

In their seminal article, Hornsby et al. (2002) emphasize the importance of the middle manager (MM) for corporate entrepreneurship (CE), as this function is crucial for initiating and nurturing corporate entrepreneurial processes. They also highlight the internal environment's role in supporting MM's engagement in CE activities. Building on this article, numerous studies have examined the consequences of the factual internal environment for corporate entrepreneurship⁶¹ (e.g., Goodale et al., 2011) as well as the antecedents of MM's entrepreneurial activity (e.g., Kuratko et al., 2005a). Most of the studies have exclusively addressed the direct link between the factual internal environment for corporate entrepreneurship and entrepreneurial activity (e.g., Kuratko et al., 2014). The literature, however, suggests that this relationship is more complex than a simple direct link. Consequently, a burgeoning number of studies has identified the moderating (e.g., Hornsby et al., 2009) and mediating (e.g., Kuratko et al., 2005b) variables that influence this important relationship, providing meaningful insights for research and practice. Despite some progress, evidence of the mechanisms through which a CE-supporting internal environment encourages MM to engage in entrepreneurial activity is still limited. Our study aims to contribute to this research stream. We draw on organizational support theory and social exchange theory, which suggest that task fulfillment, such as MM's business opportunity identification and, thus, their entrepreneurial behavior, is achieved indirectly via positive affect (Rhoades & Eisenberger, 2002).

Besides an investigation of the factual internal environment for CE, the indication that mood plays an important role in a supportive internal environment's propensity to cultivate entrepreneurial behavior also calls for a deeper examination of the perceptions of the internal environment. In an organizational environment, it is probable that different people have different perceptions and, especially in a hierarchical system, the MM and the top management's (TM) perceptions of the internal environment for CE may differ. Following shared-reality theory (Echterhoff et al., 2009), the literature suggests that MM's and TM's incongruent perceptions of the internal environment (for CE) may decrease the MM's motivation to maintain a positive mood, which again may decrease entrepreneurial behavior (Aselage & Eisenberger, 2003; Bashshur et al., 2011).

By enhancing Hornsby et al.'s (2002) model, we primarily contribute to two research streams. First, we shed light on a mechanism that helps a CE-supporting internal environment cultivate entrepreneurial activities. Focusing on positive affect as a mediating effect, we also

⁶¹ We define the factual internal environment for corporate entrepreneurship as MM's and TM's average evaluation of organizational conditions for the support of MM's business opportunities identification.

take up Baron and Tang's (2011) call to further examine the role of affect in entrepreneurial behavior. Second, our study emphasizes the consequences of perceptual incongruence in terms of an organization's internal environment. This adds a new perspective to the growing body of research on the internal environment for CE and the use of the Corporate Entrepreneurship Assessment Instrument (CEAI; e.g., Goodale et al., 2011). It also contributes to understanding how organizational members' different perceptions of the organizational environment influence their level of affect. The present research thus offers new insights into how organizations facilitate team members' entrepreneurial activity. This is not only relevant to research, but also to the managerial practice.

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

MM's positive affect is the focal intervening variable in our model, which connects all variables of interest. We thus first discuss its role in linking the internal environment for CE and MM's ability to identify business opportunities.⁶²

MM's Positive Affect as an Intervening Factor between a Factual Internal Environment for CE and Business Opportunities Identification

According to Frijda (1993), positive affect comprises several qualities, like mood (e.g., cheerfulness), which is a long-lasting state, and emotion, which is a rather momentary phenomenon (e.g., joy or surprise) directed to an object. Research has maintained that this psychological mechanism is interrelated with and has implications for processes, like decision-making (e.g., Isen & Means, 1983) and creativity (e.g., Isen, 1993). Moreover, studies have examined how, in an entrepreneurial context, information is processed in respect of recognition and decision-making (Baron & Tang, 2011) as well as innovative behavior (Amabile et al., 2005). Likewise, other research has found that internal environment support impacts employees' well-being (Rhoades & Eisenberger, 2002), which comprises long-term positive affect. These findings support our assumption that positive affect is an intervening variable between an internal environment for CE and entrepreneurial behavior.

We describe the link between positive affect and the identification of business opportunities as a precondition for mediation before discussing the links between the internal environment and positive affect.

Regulatory focus theory also suggests that positive affect has motivational characteristics and that people strive to achieve an objective (e.g., identification of business opportunities) by referring to their positive inner feelings (Idson et al., 2000). Following this theoretical approach, positive mood states – like happiness or excitement – are not only linked to an achievement-oriented promotion focus, which is associated with readiness to take on challenges in order to achieve goals and aspirations, but also to action tendencies (Carver, 2006). Activating positive mood states specifically stimulates promotion tendencies, such as the recognition and proposal of business opportunities (Baas et al., 2008). Empirical findings support these theoretical assumptions and indicate that positive affect motivates employees to cooperate during tasks and spend effort on them (e.g. Vroom, 1964; Erez & Isen, 2002). Adding to this motivational perspective on positive affect, positive mood has long been known to enhance information processing and to benefit organizational behaviors involving

⁶² We examine MM's ability to identify business opportunities, which is the key initial step in entrepreneurial and corporate entrepreneurial processes (Shane & Venkataraman, 2000; Kuratko et al., 2005b). We are aware that entrepreneurial behavior encompasses additional steps, such as idea exploitation (Shane & Venkataraman, 2000), however, we argue that, in a corporate context, many factors might affect the process of transforming new business ideas into organizational products. These factors (e.g., corporate strategy, slack resources, and hierarchical administrative systems) are beyond the scope of our research. Thus, we focus on the key first step – business opportunities identification – which has been applied in other CEAI studies (e.g., Kuratko et al., 2005b).

creativity and performance (see the literature review by Forgas & George, 2001). Forgas and George's (2001) findings suggest that enhanced information processing enables individuals to draw on a wealth of information and combine it to create new products. Given the motivational and information processing aspect of positive affect, Baron suggests that these processes are essential for and meaningful to entrepreneurial processes and variables like business opportunity identification and its outcomes (Baron, 2008). Having theoretically derived that positive affect is a required condition for the identification of business opportunities, we next explicate the links between the internal environment and identification of business opportunities via positive affect and beyond.

The Factual Internal Environment and CE

In this section, we outline the link between a factual internal environment for CE and the identification of business opportunities. We first explain the direct link between the factual internal environment and business opportunities identification, after which we discuss their indirect link via MM's positive affect.

Starting with the direct link we draw on the value, rarity, imitability, and management (VRIO) framework as part of the resource-based view (RBV; Barney, 1991), which suggests that the way a firm is organized (i.e. its internal environment) affects its exploiting of the organizational resources and its competitive potential capabilities. Similarly, an internal environment geared towards CE by integrating, enabling, and providing facilities and resources, as well as through the managerial aspects that the organization provides, supports corporate entrepreneurial activities, such as the identification of business opportunities (Hornsby et al., 2002). Accordingly, the internal environment for CE is a direct antecedent of corporate entrepreneurial activities.

Besides this direct relationship, there is also an indirect link between the internal environment and business opportunities identification via positive affect. According to social exchange theory (Emerson, 1976), an organization is a social marketplace in which employees apply their skills and efforts and expect a return on this investment. When the organization creates opportunities and supports creative efforts, employees feel acknowledged and, as part of a social exchange relationship, feel obliged to contribute something in return (Aselage & Eisenberger, 2003). Employees consequently have a higher level of positive feelings in respect of and affective commitment to the firm (Eisenberger et al., 2001). This causes employees to feel a positive mood, which, in turn, encourages them to fulfill their obligations regarding their responsibilities and tasks (Eisenberger et al., 2001), including the identification of business opportunities. The created positive mood subsequently helps them to fulfill their tasks and identify business opportunities, due to the abovementioned enhanced motivation and capacities for information processing (Baron & Tang, 2011). Thus, we hypothesize:

Hypothesis 1. MM's positive affect partially mediates the link between the factual internal environment for CE and MM's business opportunities identification.

Perceptual Incongruence Regarding the Internal Environment and CE

The perceptual differences between MM and TM regarding the internal environment may explain the link between the internal environment for CE and the identification of business opportunities in addition to the factual internal environment. As in the first hypothesis section, we first examine the direct link between the incongruence regarding the internal environment perceptions and the identification of business opportunities, after which we integrate the indirect effect via MM's positive affect.

Starting with the direct link, the different roles and associated tasks and behaviors in the different structural levels – i.e., between the MM and TM – produce divergent mental models

and, thus, perceptions of the organizational internal environment (Ren & Guo, 2011). According to Cannon-Bowers and Salas's (2001) findings, divergent mental models and, thus, disagreement on the internal environment (for CE) in an organization, impede effective coordination due to the lack of common ground for communication. Their results suggest that this has a negative impact on work outcomes, which directly hinders the achievement of organizational goals (Cramton, 2001).

Besides this direct effect, there is also an indirect link to the identification of business opportunities via MM's positive affect: According to the shared-reality theory, (Echterhoff et al., 2009), dissimilarities between people regarding their environmental and organizational conditions perceptions may lead to the group experiencing less positive social relationships and less positive affect. This is also because social group members (specifically employees) may feel their psychological contract has been violated because their perception of the (internal organizational) environment differs significantly from that of the people with whom they connect and exchange information socially or professionally (Morrison & Robinson, 1997). The resulting feeling of being misunderstood and the associated attribution of bad habits to the TM might decrease the MM's positive affect (Dasborough & Ashkanasy, 2002). This, in turn, decreases managers' motivation and information processing capacity and, ultimately, as previously mentioned, reduces the identification of business opportunities. Thus, we hypothesize:

Hypothesis 2. MM's positive affect partially mediates the link between MM's and TM's perceptual incongruence regarding the internal environment for CE and MM's business opportunities identification.

METHODS

Data Collection and Sample

For the purpose of our study, we decided to contact top managers and their respective middle managers from organizations in the information technology (IT) industry. The IT industry is a very dynamic environment marked by high uncertainty and short product life cycles. These characteristics imply great opportunities, if not a necessity, to engage in CE activities (Zahra, 1996). Moreover, we focused on a sample of small businesses. We decided to exclude microbusinesses, as it can be assumed that very small organizations do not have more than one level of management. We also excluded large-scale organizations because they have more complex hierarchical administrative systems that can facilitate or impede innovation activities (Miller & Friesen, 1984). Large firms thus have the potential to confound the relationships examined in our model (for a comparable rationale, see Lubatkin et al., 2006). We used the popular Hoppenstedt (2014) database, which provides comprehensive profiles of the 300,000 most important companies in Germany, to collect data. We identified about 4500 firms in IT-related fields that met the small company criteria (employing 11 to 50 people and generating revenue below 10 million euro; Becchetti & Trovato, 2002). We randomly drew a sample of 1500 firms. To encourage participation, and to ensure that only the intended top manager participated, we contacted each CEO by telephone before sending an e-mail with personalized login data to access our online survey. The top managers were also asked to nominate their key middle manager for participation in our study. We received 193 usable pairs of responses (from top managers and their associated middle managers), which led to a satisfactory response rate of 12.9%. The top managers' age ranged from 28 to 68 ($M = 48.22$; $SD = 7.74$) of whom 7.3% were female. The middle managers were aged between 24 and 57 ($M = 39.65$; $SD = 7.62$) of whom 19.7% were female. Most of the top (56.0%) and middle managers (63.2%) were college or university graduates.

Variables

Internal environment for CE. The well-validated and often-applied Corporate Entrepreneurship Assessment Instrument (CEAI) was used to measure the internal environment for CE (Hornsby et al., 2002, 2009; recently also applied in Goodale et al., 2011). The CEAI captures the internal environment for CE and thus the degree of organizational support for CE activities, which can be categorized into *TM support, work discretion/autonomy, time availability, organizational boundaries, and rewards/reinforcement* (for a detailed description of the dimensions, see Hornsby et al., 2002). The instrument comprises 43 items (for the list of items, see Hornsby et al., 2002). Each dimension is represented by five to 17 items. The participants responded to the CEAI items using a seven-point Likert-type scale ranging from “totally disagree” to “totally agree.” Consistent with prior research (Hornsby et al., 2002; 2008), reliability and validity testing found support for the theoretical structure of the instrument's scales. On average, the Cronbach's alphas of the CEAI subdimensions were .78 for TM (range: .63⁶³ to .86) and .78 for MM (range: .70 to .89). A confirmatory factor analysis (CFA) further underlined the measures' reliability and validity, as both the TMs' and MMs' five-factor models performed well (TMs' CEAI: $CFI = .90$, $SRMR = .08$, $RMSEA = .05$; MMs' CEAI: $CFI = .90$, $SRMR = .08$, $RMSEA = .05$). Having confirmed the reliability and validity of our measurement, we integrated the individual measures into an index representing an overall, more or less CE-supporting, internal environment. This index was computed by averaging the CEAI items. The individual assessments of TM and their respective MM were then used to compute the two independent variables. Moreover, to determine the absolute level of support for CE that the organization's factual internal environment provides, we computed the average of the TMs' and MM's evaluations. This is not only in line with our theoretical reasoning that both evaluations affect MM's entrepreneurial behavior, but it also reduces concerns regarding common method bias, which would be an issue if we only used the MMs' assessments.⁶⁴ The second independent variable – the perceptual incongruence regarding the internal environment for CE – was explicitly used to capture the perceptual differences between the TM and MM. This variable was consequently computed as the standard deviation between the TMs' and MMs' CEAI scores.

Positive affect. We used the 10 positive affect items of the well-validated Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to capture the MM's positive affect. The subjects were asked to rate their main affective state during the 12 months prior to the study in order to measure their affective style. Example items included feelings, such as active, excited, etc. (Cronbach's alpha = .86). Answers were given on a five-point Likert scale ranging from “very little/not at all” to “intensely.” The fit indices of the PANAS's positive affect scale were adequate ($CFI = .90$, $SRMR = .06$, $RMSEA = .10$).

Business opportunities identification. Business opportunities identification was operationalized as the number of new business ideas that MMs had in the six months before our survey. Asking managers to provide a concrete number of their new business ideas gave us an objective, even if subjectively reported, measure of their entrepreneurial activity. In the literature on the effects of the internal environment for CE, directly asking managers about their number of ideas is a well-established method for indicating entrepreneurial activity (Kuratko et al., 2005b).

⁶³ This slightly low Cronbach's alpha value is in line with results presented in the original validation study by Hornsby et al. (2002), who reported alpha values ranging from .64 to .89.

⁶⁴ In line with classical test theory (CTT; Novick, 1966), averaging the scores of two or more evaluations of one and the same subject is a meaningful and common practice to capture the factual properties of that object while adjusting for the measurement's failure (for application of this aggregation method see, e.g., Harrison et al., 2002).

Control variables. Finally we controlled for the educational background, age and gender of the MMs, as well as for the diversity of the MMs' and TMs' age (conceptualized as the standard deviation) and gender (conceptualized as the percentage of females in the dyad).

Analysis of Common Method Variance

Before conducting the focal analyses, we addressed the issue of common method variance. The study was designed to reduce concerns about common method bias. First, we collected data from two different sources (TM and MM), which reduces common source bias concerns (Podsakoff et al., 2003). Second, we used the variables in the model to address different levels of aggregation (the individual scores of the MM vs. the aggregated scores of both the MMs' and TMs' perspectives). Finally, the number of business ideas that MMs identified were used to indicate the identification of business opportunities. As mentioned above, we assume that the MMs did not adjust their numeric answer to their answers to the other variables in the study, as it would have been difficult for them to know how many ideas would be considered many or few. Despite these conceptual contraindications to common method variance, we used a confirmatory method that Podsakoff et al. (2003) recommend to empirically examine potentially biasing effects. Following this method, we constructed a model encompassing only one latent factor on which all items of the variables of interest loaded. According to the chi-square difference test results, this model showed significantly less fit than the CFA results regarding the MMs or TMs (a comparison between a single- and multiple-factor solution for MMs: $\Delta\chi^2 = 1168$; $\Delta df = 20$; $p < .001$; a comparison between a single- and multiple-factor solution for TMs: $\Delta\chi^2 = 1272$; $\Delta df = 20$; $p < .001$). The results of this CFA-based comparison analysis support our assumption that common method bias posed little threat.

RESULTS

Table 1 lists the descriptive results.

Insert Table 1 about here

In order to test our hypotheses, we conducted structural equation modeling (SEM), using AMOS 22.0 (Arbuckle, 2013). To gain more insights into the data, we first conducted nested-model comparisons to specify the model that best accounts for the observed covariance between the study's variables. Thereafter, following Anderson and Gerbing's (1988) suggestion, we examined path estimates to test the model's hypotheses. Following Jöreskog's (1993) suggestions, we focused on (1) the model fit by using various fit indices, and (2) on the variance explained in the dependent variables to indicate the practical significance in the model comparisons. The order of the models is based on the ascending model complexity and, more importantly, on the applicability, which demonstrates the viability of the additional link between the perceptual incongruence of the internal environment for CE and business opportunities identification. We then examined the significance of the bias-corrected confidence intervals of the bootstrapped path estimates to test the study's individual hypotheses.

In order to control for the impact of the covariate variables, we first examined a model encompassing only the covariates (model 1 in Table 2). The covariates account for only 2% of the variance in the mediator variable (MM's positive affect) and 2% in the dependent variable (business opportunities identification).

As a baseline representing the traditionally examined connection between the internal environment for CE and MM's entrepreneurial activity (e.g., Hornsby et al., 2002; 2009; Kuratko et al., 2005a), model 2 reveals a direct association between the support for CE that the factual organization's internal environment for CE and MM's business opportunities

identification provide. This model fits the data significantly better than the covariates model (model 2 vs. model 1: $\Delta\chi^2 = 5.30$; $\Delta df = 1$; $p < .05$). Model 2 explains 5% of the variance in business opportunities identification.

In model 3, we include the degree of incongruence between MMs' and TMs' perceptions of the internal environment for CE as an additional variable, in order to support our assumption that the degree of perceptual incongruence explains business opportunities identification over and above the factual internal environment for CE. As expected, the inclusion of this link leads to an increase in the variance explained in MM's business opportunities identification ($R^2 = .06$; model 3 vs. model 2: $\Delta R^2 = .01$). This model fits the data well ($CFI = .94$; $SRMR = .07$; $RMSEA = .06$) and has a significantly better fit than the baseline model (model 3 vs. model 2: $\Delta\chi^2 = 7.05$; $\Delta df = 2$; $p < .05$).

To test our theoretical reasoning that MM's positive affect is an important means of promoting business opportunities identification in a CE-supporting environment, we include positive affect as a mediating variable in model 4. As expected, the mediated model fits the data well ($CFI = .97$; $SRMR = .05$; $RMSEA = .04$). More importantly, it fits the data better than the baseline model (model 4 vs. model 2: $\Delta\chi^2 = 15.72$; $\Delta df = 1$; $p < .001$) and explains more variance in the dependent variable ($R^2 = .06$; model 4 vs. model 2: $\Delta R^2 = .01$). Model 4 leads to an increase in MM's positive affect over and above the covariates: $R^2 = .09$; model 4 vs. model 1: $\Delta R^2 = .07$).

Having identified that both theoretical extensions contribute to our understanding of the link between the internal environment for CE and MM's business opportunities identification, we subsequently compare additional models to determine whether the two extensions are complementary or mutually exclusive.

Model 5 is a full mediation model and links both the level of factual and perceptual incongruence regarding the internal environment for CE to MM's affect. It also links perceptual incongruence to MM's business opportunities identification. This model fits the data well ($CFI = .99$; $SRMR = .05$; $RMSEA = .03$); more importantly, it fits the data significantly better than model 3, which does not comprise the mediating effect (model 5 vs. model 3: $\Delta\chi^2 = 15.71$; $\Delta df = 1$; $p < .001$), and better than model 4, which does not take the perceptual incongruence variable into account (model 5 vs. model 4: $\Delta\chi^2 = 7.04$; $\Delta df = 2$; $p < .05$). Model 5 explains more variance in the dependent variable MM's positive affect than model 3 (MM's positive affect: $R^2 = .10$; model 5 vs. model 3: $\Delta R^2 = .08$ and model 5 vs. model 4: $\Delta R^2 = .01$; business opportunities identification by the MM: $R^2 = .06$; model 5 vs. model 3: $\Delta R^2 = .00$ and model 5 vs. model 4: $\Delta R^2 = .00$). The finding that the full mediation model 5 explains as much variance in the dependent variable business opportunities identification as the direct link to model 3 does, indicates that the indirect path via positive affect is as important as the direct link between the internal environment for CE and business opportunities identification.

The partial mediation model 6 is directly linked to model 4. This model fits the data well ($CFI = .98$; $SRMR = .05$; $RMSEA = .04$). The additional path is accompanied by an increase in the variance explained in the dependent variable MM's business opportunities identification ($R^2 = .07$; model 6 vs. model 4: $\Delta R^2 = .01$; MM's positive affect: $R^2 = .09$; model 6 vs. model 4: $\Delta R^2 = .00$), and the model is superior to the full mediation model (model 6 vs. model 4: $\Delta\chi^2 = 2.80$; $\Delta df = 1$; $p < .10$).

Model 7 is a partial mediation model and links both the factual and perceptual incongruence levels regarding the internal environment for CE to the MM's affect. Further, all three variables are linked to MM's business opportunities identification. This model fits the data well ($CFI = 1.00$; $SRMR = .04$; $RMSEA = .01$) and, more importantly, fits the data significantly better than the full mediation model (model 5) (model 7 vs. model 5: $\Delta\chi^2 = 5.30$; $\Delta df = 2$; $p < .10$). The partial mediation leads to an increase in the variance explained in the

dependent variable business opportunities identification ($R^2 = .09$; model 7 vs. model 5: $\Delta R^2 = .03$). Moreover, the partial mediation model 7 fits the data significantly better than the partial mediation model 6 (model 7 vs. model 6: $\Delta\chi^2 = 9.54$; $\Delta df = 3$; $p < .05$) and explains more variance in the dependent variable business opportunities identification ($R^2 = .09$; model 7 vs. model 6 $\Delta R^2 = .02$). In respect of the practical significance, it is also noteworthy that this model explains nearly double as much variance in the dependent variable than the traditionally examined direct link between the factual internal environment for CE and MM's business opportunities identification (model 7 vs. baseline model 2: $\Delta R^2 = .04$), reflecting the practical significance of the theoretical extensions.

Insert Table 2 about here

We used model 7 for the rest of our analysis, not only because it was derived from our hypotheses, but also because it is the model that fits the data best. With respect to hypothesis 1, all the findings are in line with our theoretical reasoning. The factual internal environment for CE is positively and significantly associated with the identification of business opportunities (.14; $p < .05$). The factual internal environment is also indirectly linked to new business ideas via positive affect (.04; $p < .01$). The total effect, combining the direct and indirect links, is positive and significant (.18, $p < .01$). Thus, hypothesis 1 is fully supported. With respect to hypothesis 2, we found that, as predicted, there is a negative indirect link via positive affect between perceptual incongruence regarding the internal environment for CE and business opportunities identification (-.02; $p < .10$). However, and contrary to our prediction, the direct association between perceptual incongruence and business opportunities identification is positive (.11; $p < .10$). Given these opposing findings, it is not surprising that the total effect is non-significant (.10; n.s.). In summary, hypothesis 2 is partially supported. Figure 2 depicts the path coefficients and variances explained of our hypothesized model.

Insert Figure 1 about here

DISCUSSION

In our study, we examined and found evidence for the partially mediated relationships between the factual internal environment for CE and the perceptual incongruence between MM and TM. Further, we found partially mediated relationships between MM's business opportunities identification via MM's positive affect.

An important result of our model comparison is that both the theoretical extensions of Hornsby et al.'s (2002) model – i.e. positive affect as a partial mediator and perceptual incongruence as an additional independent variable in the context of the internal environment for CE – contribute to our understanding of the link between the internal environment for CE and MM's business opportunities identification. This gives credence to the research streams calling for a stronger consideration of affect to explain entrepreneurial behavior (e.g., Baron & Tang, 2011) and for a stronger consideration of the consequences of perceptual incongruence in organizations (e.g., Bashshur et al., 2011). Our less parsimonious models, which incorporate the two new variables at the same time, indicate that these extensions are not exclusive but reconcilable.

While most of the relationships found are as hypothesized, the only exception needs discussion. We expected the direct association between MMs' and TMs' perceptual incongruence regarding the internal environment for CE to be negative, due to a lack of shared mental models and, thus, a missing common ground logic. However, the link was found to be positive. This is possibly due to friction between MM and TM, which is

associated with diverging perceptions on the degree to which the internal environment supports CE. Given task conflict processes, such friction may promote the identification of business opportunities. Task conflict theory suggests that friction between organizational members may lead to enhanced divergent thinking processes, which is a necessary condition for identifying creative (business) opportunities (e.g., Jehn, Northcraft, & Neale, 1999). More research is needed on how the two competing logics behind a positive or a negative link relate to each other in order to determine this link's underlying mechanism.

Besides this positive direct link, it is important to note that, as expected, we found a negative indirect link between perceptual incongruence and business opportunities identification via positive affect. In practice, this finding suggests that two actions might promote the identification of business opportunities: On the one hand, interactional exchanges between MM and TM might enhance shared reality perceptions and, thus, mutual feelings of being understood and acknowledged. These perceptions and feelings might decrease the perceptual differences regarding organizational support for CE and, in turn, enhance satisfaction and subsequent entrepreneurial behavior. On the other hand, promoting task-related frictions might enhance entrepreneurial behavior, due to MMs' and TMs' exchange of their divergent perceptions. However, this may also lead to a less positive working climate. The non-significant total effect indicates that neither of the two contradictory effects outperforms the other, resulting in the managerial practice facing a serious challenge regarding managing corporate entrepreneurial activity. Future research might, for example, identify moderating effects that strengthen or weaken the relationships between the respective variables.

Concerning explicit implications for the managerial practice, the balance between the direct and indirect link provides scope to modulate the strategic procedures for promoting CE activities. Frequent feedback meetings and associated bidirectional communication may reduce perceptual incongruences and give TM and MM a better understanding of the factual conditions regarding the feasibility of implementing projects like CE activities. Alternatively, TM could also stimulate these CE processes by confronting their relevant MM with divergent points of view, which promotes idea generation processes, but may also lead to a less positive working climate.

Despite the strengths of our study, there are also limitations that should be carefully addressed in future research. First, although the design of the study and our empirical tests reduced concerns regarding common method variance, the cross-sectional design does not preclude concerns regarding reverse causality. In this sense, a decrease in positive affect, for instance, might also cause incongruence in perceptions due to affect infusion, which occurs when MMs evaluate the internal environment conditions (Forgas, 2002). Although our theoretical reasoning and the empirical evidence as stated above support our model's causal direction, the opposite logic cannot be dismissed. Thus, we encourage future research to apply alternative approaches, like experiments or longitudinal designs, to test our interpretation of the direction. Second, we chose business opportunities identification. While this was undoubtedly useful in the context of our study as discussed in the theory section, there are other dependent variables that might lead to important insights, such as ideas implementation, the long-term success of CE initiatives, and firm success as a consequence of CE activities (Hornsby et al., 2009). Future research should expand the model in order to find empirical evidence of these sequencing relationships. Finally, we focused on the overall internal environment in respect of the CE factor and did not address possible differences between the subdimensions. Replacing the overall internal environment's support for CE with any of the subdimensions would not have changed our hypotheses (for comparable logics, see, e.g., Goodale et al., 2011). Nevertheless, we call on future research to conduct comparative studies, using the suggested subdimensions, to gain even more fine-grained insights.

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APENDIX

TABLE 1
Means (M), Standard Deviations (SD), and Correlations

	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Age middle manager ^a	39.66	7.61	-										
2. Age top manager ^a	48.26	7.72	.20**	-									
3. Age top versus middle manager ^b	7.21	5.64	-.52***	.53***	-								
4. Gender middle manager ^c	1.80	.40	.06	.06	.05	-							
5. Gender top manager ^c	1.93	.26	.04	-.04	-.05	.06	-						
6. Gender top vs. middle manager ^d	.13	.24	-.07	-.02	-.02	-.85***	-.58***	-					
7. Educational background middle manager ^e	5.24	1.21	.04	.10	.01	-.03	-.03	.04	-				
8. Educational background top manager ^e	5.34	1.28	.09	-.03	-.04	.03	.00	-.02	.23**	-			
9. Factual internal environment for CE ^{f,g}	4.75	.44	.09	.03	.02	.02	-.10	.04	.08	.07	-		
10. Perceptual incongruence of the internal environment for CE top vs. middle manager ^h	.46	.37	.06	.11	.06	-.07	.06	.03	-.04	.01	-.16*	-	
11. Positive affect middle manager ⁱ	3.81	.55	.12 ⁺	.00	-.02	.11	.03	-.11	.01	-.16*	.26***	-.13 ⁺	-
12. Middle manager's business opportunities identification ^j	1.13	1.76	.10	-.02	.11	.10	.07	-.12 ⁺	-.06	.01	.17**	.07	.22**

Notes: CE = corporate entrepreneurship; M = mean; SD = standard deviation.

n = 193 top and 193 associated middle managers.

^aYears;

^bStandard deviation;

^cScaling gender: 1 = female, 2 = male; ^dpercent female;

^eScaling educational background, 1 = no graduation, 2 = secondary modern school leaving qualification, 3 = intermediate secondary school leaving certificate, 4 = qualification for university entrance, 5 = college graduation, 6 = doctoral degree;

^fScaling internal environment for CE (CEAI), 1 = totally disagree to 7 = totally agree; ^gmean of middle and top manager; ^hstandard deviation between middle versus top manager;

ⁱScaling positive affect (PANAS), 1 = very little/not at all to 5 = intensely;

^jScaling business opportunities identification, number of new business ideas identified during the last 6 months.

+ p < .10, two-tailed

* p < .05, two-tailed

** p < .01, two-tailed

*** p < .001, two-tailed

TABLE 2
Nested Model Comparisons

Model	df	χ^2	χ^2/df	Bootstrap-p	CFI	SRMR	RMSEA	Comparison	$\Delta\chi^2$	Δdf	R ² in positive affect middle manager	R ² in new ideas identification middle manager
Model 1: Covariates only ^a	31	60.48	1.95	.00	.91	.08	.07					.02
Model 2: Covariates plus CEAI average of middle and top manager to middle manager's business opportunities identification ^{abc}	30	55.23	1.84	.00	.92	.08	.07	Model 2 vs. 1	5.25*	1		.05
Model 3: Covariates plus CEAI average and standard deviation of middle and top manager to middle manager's business opportunities identification ^{abd}	28	48.65	1.74	.01	.94	.07	.06	Model 3 vs. 2	6.58*	2		.06
Model 4: (Full mediation) Covariates plus CEAI average of middle and top manager to middle manager's positive affect; middle manager's positive affect to middle manager's business opportunities identification ^{abc}	25	34.32	1.37	.10	.97	.05	.04	Model 4 vs. 2	20.91***	5	.09	.06
Model 5: (Full mediation) Covariates plus CEAI average and standard deviation of middle and top manager to middle manager's positive affect; middle manager's positive affect to middle manager's business opportunities identification ^{abcd}	23	27.65	1.20	.23	.99	.05	.03	Model 5 vs. 3 Model 5 vs. 4	21.00*** 6.67*	5 2	.10	.06
Model 6: (Partial mediation) Covariates plus CEAI average of middle and top manager to middle manager's positive affect; middle manager's positive affect to middle manager's business opportunities identification ^{abc}	24	31.56	1.32	.14	.98	.05	.04	Model 6 vs. 4	2.76 [†]	1	.09	.07
Model 7: (Partial mediation) Covariates plus CEAI average and standard deviation of middle and top manager to middle manager's positive affect; middle manager's positive affect to middle manager's business opportunities identification; CEAI average and standard deviation of middle and top manager to middle manager's business opportunities identification ^{abcd}	21	22.40	1.07	.38	1.00	.04	.02	Model 7 vs. 5 Model 7 vs. 6	5.25 [†] 9.16*	2 3	.10	.08

Notes: CFI = comparative fit index; df = degrees of freedom; RMSEA = root mean square error of approximation; SRMR = standardized root mean residual.

n = 193 top and 193 associated middle managers;

^aCovariates include standard deviation of age and gender between top and middle manager and age, gender and educational background of the middle manager.

^bCEAI, Corporate Entrepreneurship Assessment Instrument; ^cCEAI average, internal environment for corporate entrepreneurship; ^dCEAI standard deviation, incongruence of the middle versus top managers' perceptions of the internal environment for corporate entrepreneurship;

The models were compared by zero-fixing the currently not considered paths of the particular models.

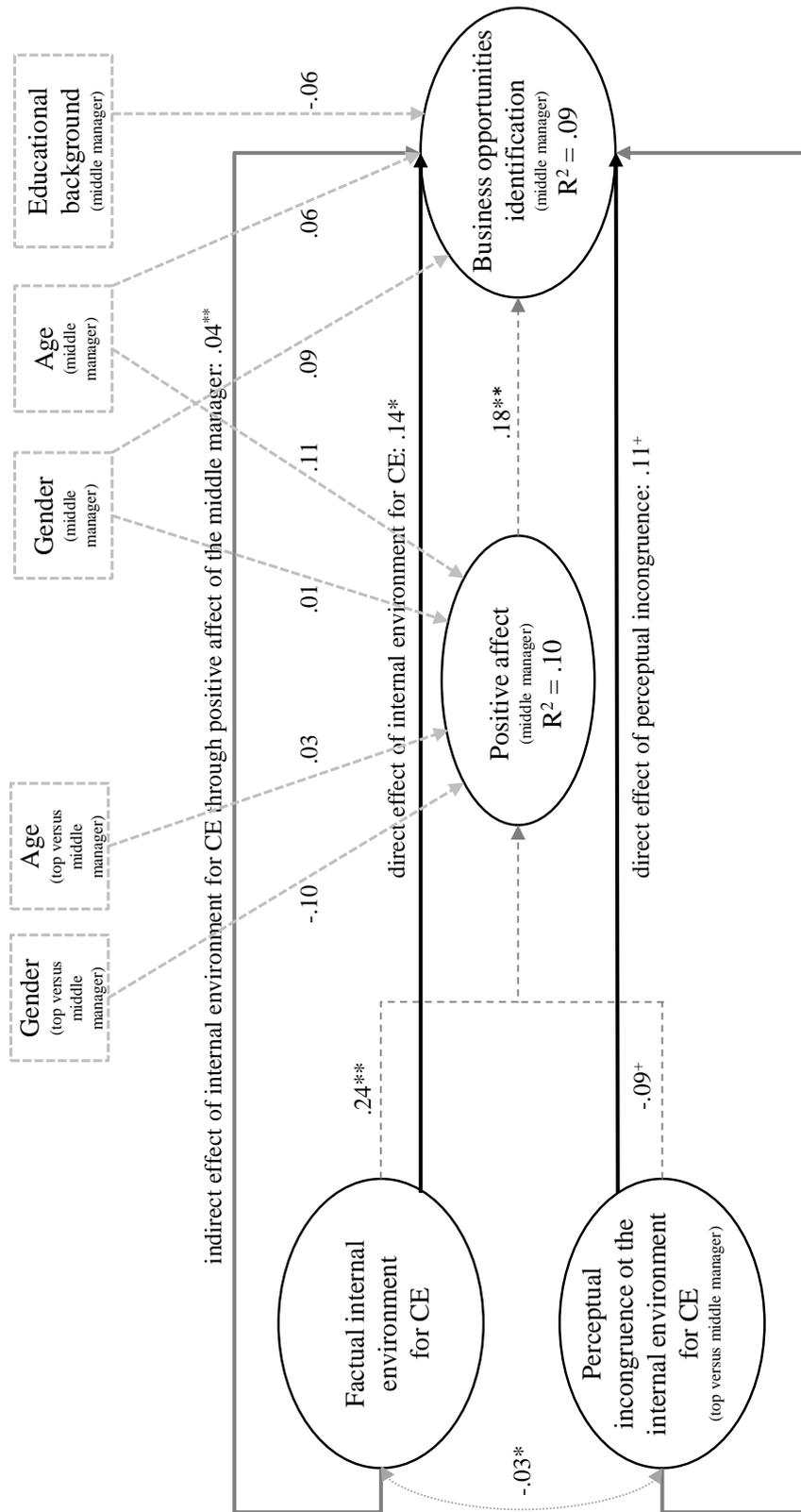
+ p < .10, one-tailed

* p < .05, one-tailed

** p < .01, one-tailed

***p < .001, one-tailed

FIGURE 1
Final Model's Results



Notes: CE, corporate entrepreneurship.
 n = 193 top and 193 associated middle managers.
 + p < .10, one-tailed
 * p < .05, one-tailed
 **p < .01, one-tailed

Different Stokes for Different Folks – A Self-Regulation Perspective on Idea Generation

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Different Stokes For Different Folks – A Self-Regulation Perspective On Idea Generation

ABSTRACT

The purpose of the present paper is to contribute to the small but growing literature studying the role of individual-level factors in corporate entrepreneurship. We use a pretest-posttest experimental design with 328 employees to capture dynamic effects between affective states and idea generation. Building on the affective shift model (Bledow *et al.*, 2011) and self-regulatory theory (Kuhl, 2000), we analyze how employees' ability to self-regulate their affective states influences their creativity. We further show how the effect of feedback as an organizational tool to increase creativity, differs, depending on the personality of the employees. Whereas state-oriented employees benefit best from a positive feedback, their action-oriented counterparts need negative feedback to maximize their creativity. Our findings provide important new insights for research on the individual level of corporate entrepreneurship, as they allow detailed insights on the idea generation process by including fundamental differences in employee personalities.

INTRODUCTION

While a number of researchers has examined why individuals leave employment to start their own ventures (e.g., Douglas & Shepherd, 2000), less attention has been paid to why individuals participate in corporate entrepreneurial activities. Scholars have long been interested in explaining the corporate environmental factors that encourage organizational members to act entrepreneurially (for two reviews, see Dess *et al.*, 2003; Zahra *et al.*, 1999). While we know a fair amount about firm-level conditions for corporate entrepreneurial behavior, we know surprisingly little about the individual-level mechanisms, which motivate and enable employees to participate in corporate entrepreneurial activities and generate creative ideas. Indeed, organizations can provide resources, formal approaches and tools that encourage creative behavior within the organization. Still, the source of innovation within organizations remains a function of individual effort (Bharadwaj & Menon, 2000).

The purpose of the present paper is to add to the small but growing number of studies that investigate individual-level factors in corporate entrepreneurship (cf. Brundin *et al.*, 2008; Monsen *et al.*, 2010; Shepherd & Krueger, 2002; Baron & Tang, 2011). We shed light on the question how employees can be influenced to act entrepreneurially on behalf of their employer. In developing our argument, we build on research that has investigated the link between affect and creativity. Drawing on the affective shift model (Bledow *et al.*, 2011) and the volitional core of the broader personality-systems-interactions (PSI) theory (Kuhl, 2000), we inform the development of our hypotheses. The affective shift model has recently shown that creativity emerges from a dynamic interplay of both, negative and positive affect (Bledow *et al.*, 2013). We build on these developments in creativity research and add personality differences provided by PSI theory that have important consequences in how we use the affective shift model in CE research and practice. We emphasize the important yet largely neglected role of personality differences in the ability to self-regulate affect in the affect-creativity link. Specifically, we seek to answer the research question *how personality differences between employees, influence the relationship between affective states, feedback perception and creativity?*

To address our focal research question, we chose an experimental design with repeated measures, i.e., a pretest-posttest experimental design with 328 highly qualified full-time employees working in a creativity-relevant environment. Importantly, this research design allows capturing dynamism by analyzing repeated measures of creative performance. We

contribute to the recently developed dynamic understanding on how creativity emerges by moving it forward towards an understanding of how—based on different abilities to self-regulate emotions—employees benefit best from different affective activations in order to fully unfold their creative potential. This in turn, will help us getting a more fine-grained view on how employees can be influenced to act entrepreneurially.

THEORETICAL BACKGROUND AND LITERATURE REVIEW

Corporate Entrepreneurship at the Individual Level

Over the past decades, research on Corporate Entrepreneurship (CE) has become an established area within the broader field of entrepreneurship (Dess *et al.*, 2003; Zahra *et al.*, 1999). Following a widely accepted definition, CE is often described as “the process whereby an individual or group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization” (Sharma & Chrisman, 1999: 18). Among other key activities, the most essential tasks of CE can be seen in (1) creating new knowledge and ideas that can be transformed into marketable products and services, (2) recognizing business opportunities related to these ideas, (3) attracting resources needed for developing these ideas (Ardichvili *et al.*, 2003; McGrath & MacMillan, 2000; Shane & Venkataraman, 2000). Employees contribute to organizational innovation in form of the generation of original and potentially valuable ideas concerning products, services, and processes (Zhou & George, 2001). To succeed this endeavor, it requires them to think creatively (Miron-Spektor *et al.*, 2011). Therefore, the major focus of this study is on the first task—the creation of ideas (ideation).

Prior research has shown that ideation often serves as a starting point for innovation (e.g., Amabile *et al.*, 1996; Baron & Tang, 2011). Creative ideas can be related towards solving an existing problem, or towards new practices, procedures, products or services (Shalley & Perry-Smith, 2008). As such, creative thinking involves imagination and insight that can ultimately lead to inventions and innovations as the goal of corporate entrepreneurial endeavors. Among the few studies at the interface of firm-level innovation and individual creativity, Baron and Tang (2011) have shown that creativity is positively related to firm-level innovation. They further show a positive link between positive affect among entrepreneurs and their creativity. In a similar vein, Perry-Smith and Coff (2011) have shown that a positive activation mood in entrepreneurial teams facilitates idea generation. Yet, the effect of negative affect for the creative process of idea generation in entrepreneurship has not been addressed by prior literature so far.

Moreover, CE literature has not looked at personality differences in producing creative ideas or the effect of feedback on employees’ creativity. Within the CE literature, a number of factors at the organizational (Messersmith & Guthrie, 2010; Hornsby *et al.*, 2013) and project (Monsen *et al.*, 2010; Shepherd *et al.*, 2013) level are considered to influence the employees’ motivation to engage in corporate entrepreneurship. Although studies on firm-level factors can have important implications for individual-level activities, they are limited in providing in-depth insights on the individual-level mechanisms, which motivate and enable employees to participate in corporate entrepreneurial activities. In fact, prior literature has not provided us with an explanation why some incentives work for some employees while the same incentives do not work for other employees.

Theoretical Framework

Following Brazeal and Herbert (1999) who suggest that entrepreneurship as a field should take a more holistic orientation and include relevant information from related areas of research,

this study builds on fundamental insights on the creative process offered by the neighboring literatures on creativity, psychology and leadership. In light of our research question, literature on creativity has recently pointed out that affective states (e.g., Baas *et al.*, 2008, Davis, 2009), and more importantly affective shifts (Bledow *et al.*, 2013) have a major influence on creativity. That is, particularly the shift from negative to positive affect enhances creativity (Bledow *et al.*, 2013). We build our assumptions on these recent findings stating that neither positive nor negative affect alone are sufficient to explain the emergence of creative ideas but their dynamic interplay. Moreover, we emphasize differences between individuals in the ability to self-regulate affective states (Kuhl, 2000) and add these differences to a dynamic framework including affective states. To date, research has not examined how such an affective shift arises. In this study, we look at external stressors (e.g. feedback as a mechanism to induce affect in potential employee entrepreneurs) but also at self-regulatory mechanisms within employees (Kuhl, 2000). As people differ in their ability to self-regulate their affective states, we add feedback as an external stimulus and self-regulatory differences to the affective shift model (see Figure 1).

Insert Figure 1 here

In the following, we will draw on central tenets of PSI theory to develop a set of hypotheses, which examine the relationship between differences in employees' ability to self-regulate affective states and changes in affective states triggered by feedback on previous performance, and employees' creative performance.

HYPOTHESES DEVELOPMENT

PSI theory focuses on functional relationships among cognitive systems and dynamic affective processes that underlie mental functioning and behavior (Kuhl, 2000). According to PSI, simple, automatic behavior occurs through low-level cognitive systems that enable automatic programs and intuitive behavioral control. For complex behaviors that require higher cognitive involvement, more sophisticated cognitive structures, responsible for analytic processing need to be activated (Kaschel & Kuhl, 2004). Enacting complex cognitive tasks such as creative idea generation requires a coordinated interplay between low-level and high-level systems. Such coordination between the cognitive systems is controlled by state changes in positive and negative affect. Affective shifts can arise through external stressors but also through self-regulatory mechanisms within persons (Kuhl, 2000). PSI theory states that individuals differ in their ability to self-regulate affect and thus, in coordinate cognitive functioning (Kuhl *et al.*, 2006). The difference in this ability is called action control (Kuhl & Goschke, 1994). Individuals can be either action- or state-orientated, whereas action-orientation corresponds to the ability to self-regulate affect, and state-orientation corresponds to a lack of this ability (Diefendorff *et al.*, 2000).

Prior research has shown extensively that action-oriented individuals are better capable than state-oriented individuals in self-regulating their affective states (for a review see Diefendorff *et al.*, 2000). Across several areas such as learning, sports or health-related activities, action-oriented individuals enact their plans and intentions more effectively and experience less perseverating negative affect than state-oriented individuals (e.g., Koole *et al.*, 2012; Kazén *et al.*, 2008). Particularly when intention enactment is a non-routine task that includes effective mental functioning—for example to overcome intrusive thoughts or indecisiveness, or to ignore distractions—action-orientated individuals seem to be better able

in “getting a grip on their feeling” (Koole & Jostmann, 2004). Consequently, action-oriented individuals are usually better in effective decision-making and complex tasks fulfillment (Jostmann & Koole, 2006). As the generation of creative ideas is one of the most complex mental functioning (Bledow et al., 2013), we postulate for potential employee entrepreneurs:

Hypothesis 1: Action-oriented employees generate more original ideas than state-oriented employees.

According to PSI theory, positive affect enables individuals to enact on their intentions by translating intentions into action strategies (Kuhl & Kazén, 1999). Positive affect also facilitates the access to a broad range of cognitive resources such as prior knowledge, or similar experiences, which allows for exploratory thinking and therefore increases originality (De Dreu et al., 2008). Negative affect, in turn, enables individuals to draw attention to the task on hand (George & Zhou, 2002). By signaling that effort needs to be made to solve a situation (Foo et al., 2009), it allows individuals to focus, to persist, and to painstakingly analyze of what needs to be done (De Dreu et al., 2008). Hence, negative and positive affect are responsible for distinct cognitive functions.

The affective shift model therefore suggests that both negative and positive affect play important roles for creative outcomes (Bledow et al., 2011). Although the presence of positive affect alone would allow for creative outcomes (Baas et al., 2008), a prior sequence of negative affect unleashes the maximum ability for generating creative ideas by detecting and analyzing the task on hand, and thereby eliciting the progress (Bledow et al., 2013). On the contrary, negative affect alone, impedes creativity as it hinders the enactment of tasks (Baumann & Kuhl, 2002).

In PSI theoretical language, high levels of negative affect—for example when an employee experiences threat—activate low-level systems while high-level systems remain inactive (Kuhl, 2000). When the level of negative affect decreases—for example when an employee feels relaxed—the high-level cognitive systems become activated. Hence, a down-regulation of negative affect enables access to contents of the higher-level cognitive systems necessary for idea generation. By contrast, the inability to down-regulate negative affect, impedes access to those systems and thereby the ability to integrate the intention (here: to generate creative ideas) with corresponding action strategies (Kuhl et al., 2006). According to PSI theory, state-oriented individuals lack the ability of coping with negative affect (Kuhl, 2000). Thus, when experiencing high initial negative affect, state-oriented employees are presumed to stay in a state of rumination unable to enact a complex task (Koole et al., 2005).

On the contrary, action-oriented individuals are particularly presumed to be highly skilled at coping with negative affect and in generating positive affect through activation of relevant information (Jostmann & Koole, 2006). Thus, action-oriented employees should be able to down-regulate negative emotions and to enable themselves to enact a complex task such as idea generation. They might even benefit from initial negative affect. Initial negative affect allows them to experience both, negative affect necessary for drawing attention on the task and analytical thinking, and—by self-regulating their affective states—also the positive effect of down-regulated negative affect and up-regulated positive affect (Bledow et al., 2013). Bridging the affective shift model with PSI theoretical differences in potential employee entrepreneurs, we postulate:

Hypothesis 2: When negative affect is high

- a) *action-oriented employees more likely generate creative ideas*
- b) *state-oriented less likely generate creative ideas*

With regard to positive affect, an action-orientation style should enable employees to generate ideas through a self-induced up-regulation of positive affect even when experiencing low initial positive affect. When experiencing low initial positive affect—for example when an employee experiences frustration or discouragement from superiors—the connection between high- and low-level cognitive systems is disturbed, which prevents action (Kuhl, 1994). In this case the generation of ideas remains an abstract goal as the access to high-level cognitive systems is impeded (Koole *et al.*, 2005). By contrast, when positive affect is high—for example when an employee receives recognition by superiors—the connection is facilitated allowing the high-level systems to translate the abstract goals of idea generation into small and concrete behavioral step (Kuhl & Kazén, 1999). Hence, a state shift toward increased positive affect paves the way between both levels necessary for creative outcomes.

PSI theory states that only action-oriented individuals are assumed to have this capacity to up-regulate positive affect themselves (Kuhl *et al.*, 2006). In contrast, because state-oriented employees lack this capability (Koole *et al.*, 2012), they should be inhibited in their creative performance when not experiencing high initial positive affect. Yet, in a corporate setting, affective states are not only provoked by self-regulation mechanisms. In fact, organizational settings influence employees in many ways. The most direct instrument for influencing employees is leadership behavior (Amabile, *et al.*, 2005). Employees' creative performance, in particular, is strongly influenced by feedback (Zhou, 1998). In particular, research in this field has consistently demonstrated the benefits of perceived leader support for subordinate creativity (for a review see Mumford *et al.*, 2002). According to Zhou (1998), employees' creative performance is particularly influenced by feedback. She postulates that positive and supportive feedback highly enhances employees' creative performance, whereas employees barely have the ability to act creatively after receiving a negative feedback. Therefore, state-oriented employees might benefit from positive organizational support in terms of positive feedback, as this will help them to up-regulate positive affect and down-regulate negative affect as suggested by the affective shift model (Bledow *et al.*, 2011, 2013).

However, for action-oriented employees, we assume a self-regulation of affective states (cf. Hypothesis 1). Hence, a positive feedback on already down-regulated initial negative affect (and up-regulated positive affect respectively) would undermine the positive influence of negative affect. Action-oriented employees hence, need to be brought back into a stage of negative affect. Taken together, we postulate that

Hypothesis 3: When receiving positive feedback

- a) action-oriented employees less likely generate creative ideas*
- b) state-oriented employees more likely generate creative ideas*

EXPERIMENTAL DESIGN

We use a pretest-posttest experimental control group design measuring creative performance before and after a treatment, i.e. feedback on the performance of the participants. The twofold measurement of creative performance allows for analyzing the effect of negative affect without external stimulus (i.e. feedback), but also for analyzing the effect of externally induced affective states on creativity. When analyzing the effect on creativity after the treatment, we take into account the base level of creativity. Thereby, our design permits to remove consistent individual differences.

Sample and Procedure

The database for our study consists of alumni from a large university (N=1575). To ensure commitment, we contacted each person personally via e-mail. We provided information on the purpose of the study, the duration, and contact information for feedback and questions, and asked for their willingness to participate in our study. We further asked whether they are currently working full-time in a job that requires creative ideas. Those potential participants that affirmed all three questions got the final invitation for our study including the link to the experiment (N=1481). Out of the identified sample, 469 highly qualified practitioners working full-time in a creativity-relevant work environment participated in our study (response rate: 31.7 %).

Before starting, the participants were asked to avoid a priori potential interferences that may occur during the tests. After the tests, we asked them again if any disturbances occurred. We excluded those indicating that they have been disturbed during the tests (N=57). For our final sample we further excluded those participants who did not received feedback (N=84). We base our analysis on 328 participants.

Participants started the study by rating their momentary affect and proceeded with the first creativity test (t_0) in which we asked them to come up with as many creative ideas as possible. After a time limit of 120 seconds, the page was switched automatically to the next page. Subsequently, the participants were confronted with either a negative or a positive feedback. The feedback was randomly assigned to them. The participants proceeded with the second creativity test (t_1) in which they had again 120 seconds to produce creative ideas. We then asked them to evaluate the perceived feedback.

Measures

For our *dependent* variable—*original idea generation*—we used a subtest of Torrance's Test of creative thinking (1974), asking the participants to mention unusual usage possibilities for a tin and for a simple cord. This test has turned out to be suitable for measuring divergent productivity as a crucial component within the creative process (e.g., Kim, 2006). We randomized the order of the tests. For both tests, two independent coders rated each unique idea for originality. Originality was defined as "*an idea or suggestion that is infrequent, novel, and original*" (from 1 = not original to 5 = very original) (cf. De Dreu *et al.*, 2008). Coders were trained on a test sample (n =103, rwg = .91). For the final sample, coders had to rate 17.280 observations. Interrater agreement (rwg = .99) was very high (LeBreton & Senter, 2008). The coders discussed the 121 observations in which they disagreed on. For further analysis we use the value they agreed on after discussing. Considering learning and order effects, we compute a ranking of originality ranging from 0 to 1 for each test. This allowed us to aggregate the participants into two groups only differing from the received feedback.

The *manipulation* took place in form of a given feedback between the two tests. Feedback was either negative or positive. We randomly assigned participants to one of the experimental conditions resulting in a 2 x 2 (feedback x test order) in-between subject design with repeated measures. We adapted the comments for the feedback conditions from previous studies (e.g., Zhou, 1998) and modified them to fit the purposes of the present study. The positive feedback (negative feedback in parentheses) read as follows: "*Out of a possible score of 30 points you have received 27 (3) points. You are in the 90th (10th) percentile of the population. Your creative potential is far better than (way below the) average.*"

As an *independent* variable, we divided participants into state vs. action-oriented employees using Kuhl's Action Control Scale (Kuhl, 1994; Dieffendorf *et al.*, 2000). The scale is based on 12 implicit self-representations. That is, each item describes a situation and a state-

oriented and action-oriented way to respond. We asked the participants to indicate how they would react in the given situations. An exemplary item is: *When I have to solve a difficult problem (a) I usually don't have a problem getting started on it (b) I have trouble sorting things out in my head so that I can get down to working on the problem.* In this case, answer (a) refers to action-orientation and answer (b) to state-orientation. We coded action-oriented responses as 1, and state-oriented responses as 0 and summed them up. Hence, the scores for each dimension have a range of 0–12 points. The higher the score is, the stronger the participants' disposition towards action-orientation. Following Kuhl (1994), we created a dichotomous variable. Scores ≥ 8 in the summed index indicate action-orientation (N=206) and scores < 8 indicate state-orientation (N=122) (see also Jostmann & Giesemann, 2014). The action control scale has sufficient reliability (Cronbach's Alpha = 0.87) and adequate construct validity (see also Dieffendorf *et al.*, 2000, for psychometric information).

We measured *negative affect* with the Positive and Negative Affect Schedule (PANAS; Watson, Clarke, & Tellegen, 1988). Positive affect and negative affect, as measured by the PANAS, vary independently from each other (Watson *et al.*, 1988). For our study, we use the negative affect part of the scale. The scale consists of 10 adjectives that are rated on a 7-point unipolar response scale, ranging from (1) not at all to (7) extremely. Participants were asked to indicate “*how do you feel right now, that is, at the present moment*” before the first creativity test to determine the effect of the current affective state on creative performance. The mean values of the items range from 1.1 to 5.9. The Cronbach's Alpha for the negative affect scale is 0.86 indicating a high reliability.

In addition, we asked the participants for their *perception of the received feedback*. To check whether the participants accepted the feedback as an appraisal of their performance, we calculated the mean feedback valence with three items on a 5-point Likert-scale ranging from (1) (negative, unpleasant, and demotivating) to (5) (positive, pleasant, and motivating). Mean values range from 1 to 5. The perception of feedback has sufficient reliability (Cronbach's Alpha = 0.85). Besides these measures we recorded gender (coded 0 for females and 1 for males), and age as control variables.

Results

Manipulation Check

In a first step, we analyzed whether our experimental manipulation was successful. For this purpose, we used the measures of the participants' perception of the given feedback. An ANOVA analysis reveals that those who received positive feedback, compared to those who did not receive positive feedback, score significantly higher in their perception of received feedback (positive feedback: $M = 3.5$, $SD = 0.6$; no positive feedback: $M = 2.6$, $SD = 0.5$; $p > 0.000$). Thus, the manipulation was successful. As the participants' perception of the situation can be seen as their representation of the presented feedback and more immediately reflects the situation from the participants' perspective, we will use the perception of the feedback for further analyses.

Descriptive Statistics and Correlations

Our final sample consists of 218 (66 %) men and 110 (34 %) women, with age ranging from 23 to 65 years ($M = 32.4$, $SD = 6.8$). Table 1 summarizes the descriptive statistics for the total sample and for the sub-samples of state-oriented and action oriented respondents. Table 2 shows the correlations for the dependent, independent and control variables. It reveals a significantly positive between the two creativity tests at t0 and t1 ($r = 0.18$; $p < 0.01$), a positive correlation between action orientation and creativity test at t0 ($r = 0.16$; $p < 0.01$), and a

negative correlation between action orientation and negative affect t0 ($r = -0.14$; $p < 0.05$). None of the remaining correlations were significant on p level < 0.05 .

Hypotheses Testing

In order to test our hypotheses, we applied various hierarchical linear regression models. For Hypothesis 1, 2a and 2b, we applied the cross-sectional information and predicted creativity at t0, while for Hypothesis 3a and 3b we applied the lagged data predicting creativity at t1 simultaneously controlling for the original creativity at t0. The test of Hypothesis 1 is shown in Model 2 (cf. Table 3) and reveals a positive impact of action-orientation on creativity ($\beta = 0.098$; $p < 0.05$) providing support for the first hypothesis. Hypothesis 2a and 2b are tested on the sub-samples of state-oriented and action-oriented respondents respectively. We find a non-significant impact of negative affect t0 on creativity in the state-oriented sample and significant positive effect of negative affect on creativity t0 for the action-oriented sample ($\beta = 0.037$; $p < 0.05$). This suggests a rejection of Hypothesis 2b and support for Hypothesis 2a.

Hypothesis 3a and 3b are tested in Model 6 and Model 8 respectively (cf. Table 4). After controlling for the original creativity t0, feedback perception has a positive impact on creativity t1 for state-oriented respondents ($\beta = 0.052$; $p < 0.10$) and a negative impact on creativity t1 for action-oriented respondents ($\beta = -0.047$; $p < 0.05$). This provides support for Hypothesis 3a and marginal support for Hypothesis 3b.

Insert Tables 1-4 here

DISCUSSION

Scholars contend that creative workers promote the competitiveness and success of a firm (e.g., Madjar, Oldham, & Pratt, 2002). Evidently, employee entrepreneurs need to be creative to come up with the big idea. Prior literature in CE has mainly examined organizational factors to explain CE activities. In our study, we address the individual employee as a source of original ideas that eventually might lead to innovation. Our results show that in general action-oriented employees are more original in generating ideas. Building on the affective shift model and differences in individuals in self-regulating affect provided by PSI theory, we suggested that action-orientation allows for self-regulating negative affect, which increases originality. As hypothesized, our results show that initial negative affect increases the originality for action-oriented employees but not for state-oriented employees. Hence, the importance of an affective shift is consistent with results obtained in previous studies in related domains (e.g., Bledow et al., 2013).

In addition, our research empirically establishes differences in individuals to explain different coping with negative affect. Specifically, our results indicate that due to their differences in affective self-regulation, only action-oriented employees can be creative when experiencing initial negative affect. On the other hand, positive feedback is only beneficial for state-oriented employees. That is, state-oriented employees can increase their originality when they receive organizational support in form of a positive feedback. As action-oriented employees are able to self-regulate their affective states, positive feedback has no positive effect for action-oriented employees. Thereby our results show that potential employee entrepreneurs need considerably different organizational stimuli. Hence, our results confirm not only prior literature on the affective shift model, but also offer an explanation for how

employees differ in their ability to handle their initial emotions and feedback reactions. These findings have a number of key implications for CE research and for managerial practice.

Contribution and Implications

Against a backdrop of sparse prior research investigating the individual level of corporate entrepreneurship, our results offer important insights on how the creativity of employees can be enhanced by leadership behavior, and by accentuating the importance of appropriate feedback as being vital for the ability to act entrepreneurially. More specifically, by pointing out how employees react differently to a given feedback, we highlight the importance of taking individual differences into account when researching about organizational mechanisms to increase corporate entrepreneurial activities. Thereby, our results go significantly beyond extant research by bridging prior knowledge from CE, creativity, leadership and psychology literature and by integrating them into a coherent framework to explain how personality differences in the ability to self-regulate affect influences the relationship between affective states and employee creativity. By emphasizing the crucial role of individual differences in coping with negative affect for generating ideas, and by demonstrating how employees' action control regulates the way in which affect influences their creativity, we are able to explain why employees' behavior varies despite the same (given and perceived) feedback or the same initial affective state.

Differences in action control might be helpful to likewise investigate the effect of other CE tools. Literature about CE has often suggested compensation and incentives system to motivate employees to participate in corporate entrepreneurial activities (e.g., Hornsby et al., 2013), without investigating the factors leading to actual CE behavior. Thereby it remained unclear, why some incentives work for some employees while not for others. Our framework offers a new explanation that might help to explain not only differences in the effect of feedback but also for other CE tools such as compensation.

Moreover, the ability to self-regulate affect offers not only a fruitful explanation for why only some employee can be motivated, but also for why some employees with the same degree of motivation do not perform equally. Our work, hence, can extend prior studies by adding a potential explanation for the empirical phenomenon that despite strong motivation for corporate venturing activities, performance differences abound.

From a general perspective, the role of affect in the context of corporate entrepreneurship is often not explicitly considered. Yet, our findings suggest that affect has a major influence on creativity and thus on the employees' ability to act entrepreneurially. Our results underline the relevance of including affect in ongoing efforts to investigate emotions in the context of entrepreneurship (Cardon *et al.*, 2012; Patzelt & Shepherd, 2011; Baron *et al.*, 2012.) but also call for investigating emotions within a CE context.

Our results are also in-line with the growing consensus that micro-level factors in the form of employee motivation and self-regulation are related to macro-level factors such as firm performance (e.g., Ciavarella *et al.*, 2004). Prior literature has already shown that creativity is positively related to firm-level innovation (Baron & Tang, 2011). Our findings help to explain the emergence of creativity among employees better and thereby add to the sparse prior research investigating the individual level of corporate entrepreneurship.

From a practical perspective, our findings suggest that employers need to be aware of the fact that the creative output of their employees is not equally spread among their employees. Not every employee has the same ability to come up with a big idea that might lead to the next radical innovation. While this might not be very surprising, other results further suggest that particularly the ability to self-regulate negative affect is vital to idea generation. When

employees can handle negative affect by themselves (i.e. when they are action-oriented), organizations should not try to support them additionally as supportive positive feedback undermines their creativity. Rather, they should ensure that their action-oriented employees get feedback that provokes a sequence of negative affect. This is in line with recent developments in creativity literature (Bledow *et al.*, 2013) but counterintuitive to what leadership literature has told us so far (Mumford *et al.*, 2002).

Beyond feedback as a leadership tool, the awareness of differences in regulating affective states opens a wide spectrum of options for designing the work environment that provides different external stimuli according to the needs of their employees. Hence, our findings suggest a powerful way to enhance employees' ability to act more creatively, which is an integral part of entrepreneurial activity.

Limitations and Outlook on Future Research

When interpreting the results of our study, we have to keep several limitations in mind. First, we manipulated our participants by giving them a randomly assigned feedback on their performance. Although feedback is a common organizational tool, it may be restricted to rather short-lived changes in affect. Future research should explore whether the same effects occur for longer-lasting affect induction. Second, affect was measured only once. Although we find different effects between action- and state-oriented employees of initial negative feedback and positive perception of feedback, we can only assume that such a difference is caused by a shift in affective states. While perfectly in line with the theory and prior empirical research (e.g., Bledow *et al.*, 2011, 2013), future research should establish this shift by measuring not only performance but also affective states manifold.

In addition and as stated before, this study only focuses on the idea generation process at the individual level. Evidently, originality is of utmost importance at this stage. However, before reaching firm-level outcomes, ideas need to be implemented. Before getting implemented, ideas need to be evaluated, and necessary resources need to be provided. To meet CE goals, creative ideas finally need organizational resources and support to get implemented. This process requires different skills and happens at a different level, i.e. within a team or within organizational constraints. The implementation of ideas in organizations is further a highly political and social process. As we aim at helping to unleash the creativity of individual employees, we only focused on idea generation. Prior research in entrepreneurship has established a direct positive effect between individual ideas and firm-level outcomes (Baron & Tang, 2011). Hence, the employees' generation of a creative idea seems to be necessary for corporate entrepreneurial behavior, i.e., creative ideas represent the starting point from which CE outcomes can arise (Shalley & Perry-Smith, 2008). Yet, it might not be sufficient. Future research could further confirm the link from ideation to innovation by investigating on the later stages such as idea evaluation and implementation.

Conclusion

The present study shows that personality differences play a key role in handling affect in the creative process. The patterns we identify provide a detailed understanding of how affective self-regulation determines the kind of feedback employees should get to increase idea generation as a first step in corporate entrepreneurial activities. The current emphasis that many firms place on enhancing creativity and entrepreneurial acting as a key to organizational effectiveness and competitive advantage (Amabile *et al.*, 1996) is a strong impetus for research on corporate entrepreneurship on the individual level. As our findings highlight the influencing role of psychological processes for corporate entrepreneurial phenomena, we encourage our colleagues to further investigate this important line of research.

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Figures and Tables

FIGURE 1: Extended Affective Shift Model

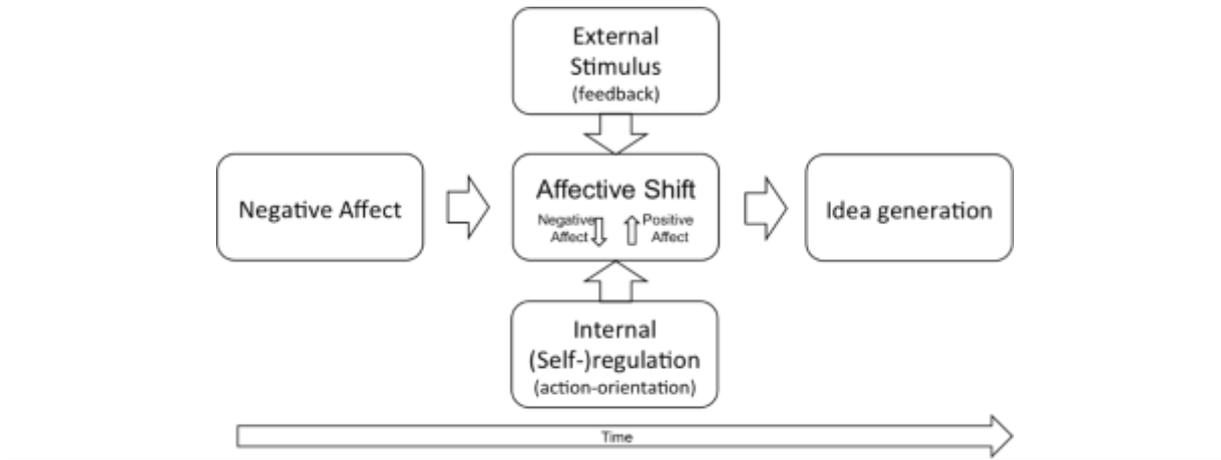


TABLE 1: Sample description

	Total sample	State oriented sample	Action oriented sample	Anova (Two-tailed)
Sex (male)	0.66	0.73	0.63	* ¹
Age	32.4	31.6	32.9	n.s.
Originality test T ₀	0.51	0.45	0.55	**
Originality test T ₁	0.52	0.52	0.53	n.s.
Negative affect T ₀	3.02	3.19	2.92	**
Feedback perception	3.06	3.04	3.06	n.s.

Note ¹: Chi² test

TABLE 2: Means, Standard Deviation and Pearson Correlations

	Mean	S.D.	1	2	3	4	5	6	7
1. Originality test T ₀	0.51	0.29	1.00						
2. Originality test T ₁	0.52	0.29	0.18*	1.00					
3. Action orientation	0.63	0.48	0.16*	0.01	1.00				
4. Negative affect T ₀	3.02	0.96	0.04	-0.08	-	1.00			
5. Feedback perception	3.06	0.76	0.02	0.01	0.01	-	1.00		
6. Age	32.4	6.82	0.02	0.05	0.10	-	0.04	1.00	
7. Sex (male)	0.66	0.47	0.03	0.06	-0.11	-	0.06	0.11	1.00

Notes: p>0.05; ** p>0.01

TABLE 3: Linear Regression predicting Originality T₀

	Full Sample			State oriented sample		Action oriented sample	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Age	.001	-.000	.000	.006	.006	-.002	-.002
Sex (male)	.017	.029	.032	.033	.032	.021	.029
Action orientation		.098**	.103**				
Negative affect T ₀			.019		-.003		.037*
N respondents	328	328	328	122	122	206	206
R Square	.001	.028	.032	.018	.018	.004	.018
R Square Change		.027**	.004		.000		0.14 [†]

Notes: [†] p>0.1; * p>0.05; ** p>0.01

TABLE 4: Linear Regression predicting Originality T₁

	Full Sample			State oriented sample			A
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	
Age	.002	.002	.002	.006	.005	.005	.000
Sex (male)	.036	.027	.027	.098	.091	.078	.003
Action orientation		-.018	-.018				
Originality T ₀		.181***	.181***		.210*	.205*	
Negative affect T ₀		-.024	-.024		.004	.003	
Feedback Perception			-.001			.052 [†]	
N respondents	328	328	328	122	122	122	206
R Square	.006	.042	.042	.039	.079	.098	.000
R Square Change		.036**	.000		.039 [†]	.019	

Notes: [†] p>0.1; * p>0.05; ** p>0.01

A Theoretical Framework for Understanding Women Entrepreneurs in Boomtowns

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A Theoretical Framework For Understanding Women Entrepreneurs In Boomtowns

Abstract

The social, political, and economic impacts of resource industries on women have been addressed by a broad range of studies (sociology, anthropology, criminology and psychology), but rarely has research examined the role of women as business owners in resource towns. In most cases, socio-economic impact studies on an extractive industry with a gender lens have portrayed women as wives of industry workers or as local residents. In very few instances have their roles as business owners been researched in detail. We address this research gap and propose a framework by incorporating literature from strategic management, entrepreneurship, and studies of social impacts of extractive industries. The framework suggests how factors including gender dimensions of strategic decision-making, internal organisational factors, and impacts of the boom direct a women in business to view and respond to changes associated with the industry as an opportunity, a challenge, or a threat.

Introduction

An understanding of female entrepreneurship in resource boomtowns requires attention to a combination of social, spatial, and institutional factors. We propose a framework that draws from literature on impacts of extractives industries (e.g., mining, forestry, oil and gas) on towns, strategic management, and female entrepreneurship. The resulting framework suggests that attention needs to be paid to how the gender dimensions of (a) strategic decision-making, (b) internal organisational factors, and (c) impacts of a boom influence whether the establishment or growth of an extractive industry is responded to as an opportunity, a challenge, or a threat by women in business. Here, opportunity and threat is similar to Dutton and Jackson's (1987) notion. It refers to the result, which is derived from the perception of potential losses or gains, and/or the ability to control external factors. Whereas, challenge is similar to Schneider and Meyer's (1991) crisis, which has been defined by the authors as "interpretations derive from the perceived value of possible loss, probability of loss, and time pressure" (p.308).

In the contributing literature, female entrepreneurship has been characterised in terms of personality traits such as locus of control (Nwachukwu, 1995; Spector, 1992), need for achievement (DeCarlo & Lyons, 1979; Smith et al., 1982), internal business factors such as profit, revenues and human resources ([Lerner & Almor, 2002](#)), and personal factors such as desire for work-life balance (De Bruin et al., 2007; DeMartino & Barbato, 2003). This literature also characterises how women business owners/managers deal with opportunities and challenges in a particular environment, such as a market with high levels of uncertainty (Welter, 2011).

Environmental uncertainty can influence the processes of business decision-making that women undertake ([Man & Lau, 2005](#); Ürü et al., 2011). However, there has been little attention to how male domination in towns - such as in mining, forestry, oil and gas regions - may impact women-led businesses. There is a growing call to consider social, spatial and institutional context to broaden knowledge on entrepreneurship, and, in particular, female entrepreneurship (Steyaert & Katz 2004; Welter & Smallbone, 2008). That can be seen as particularly relevant given the recent boom in unconventional gas development across wide areas in North America and rural Queensland, and in other areas where mining, forestry, or energy production may expand rapidly.

The social, political, and economic impact of such resource industries on women have been investigated by a broad range of studies from fields such as sociology (Carrington & Pereira, 2011), political science ([Markusen & Markusen, 1978](#)), anthropology ([Ballard & Banks, 2003](#)), economics ([Davidson, 1979](#)), psychology (Gill, 1990; Moen, 1981) and criminology (Carrington & Hogg, 2011). These studies have mainly focused on the roles of

women as wives of industry workers (Dempsey, 1992), as local residents (Sharma, 2010), or as industry employees (Mathias, 1993; Mayes & Pini, 2010; Pattenden, 2004). However, female entrepreneurship in boomtowns has attracted only modest attention.

Therefore, in this paper, we draw on literature from strategic management, entrepreneurship and studies of the social impacts of extractive industries to propose a framework. The framework is meant to help give structure to studies of the strength of various factors affecting women in business in towns that are significantly impacted by resource extraction industries. We also glean contributing insights from studies of factors influencing women’s participation in the formal workforce as well as in business more generally (e.g., Jonung & Persson, 1993; Mehra & Gammage, 1999). These widely studied factors can assist in determining the little researched issue of the gender dimension of the impact of a resources industry on local businesses led by women. We start by explaining our methodological approach, then present our framework through a series of propositions based on our reading of the literature, and then conclude with suggestion by suggesting research on the propositions proposed and exploration to identify further factors affecting these women-led businesses.

Methodology

Because only a small body of literature that addresses business women in boomtowns alone, we broadened our review to address the literature on women’s entrepreneurship, strategic management, and socio-economic impacts of extractive industries. This scope yielded a range of literature, which was critically reviewed to identify and analyse relevant concepts, and to provide an overarching framework for understanding the strategies and processes used in small businesses run by women in resource regions. Based on the review, we developed testable propositions to understand how the industry affects the way that women in business in a boomtown perceive and respond to the changes occurring. Figure 1 shows the framework.

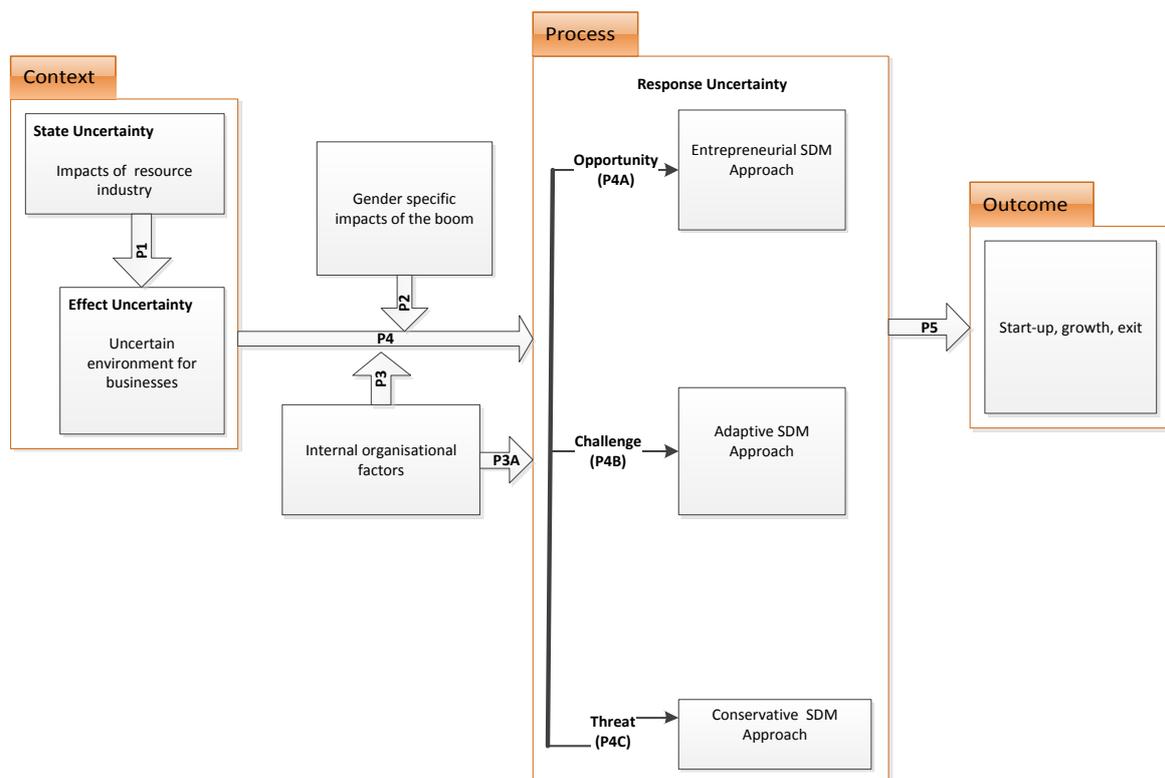


Figure 1: Theoretical framework on women-led businesses in resource boomtowns

Resource Boomtowns as uncertain business environments

Resource regions exhibit the rapid and discontinuous change characteristic of uncertain environments (Eisenhardt & Bourgeois, 1988). That is because the extraction of minerals and resources involves dramatic physical transformation and considerable movement of people, including an influx of labour and consequent rapid increases in population (CommDev, 2012). This uncertainty in a resource boomtown can weaken the social and economic fabric of rural communities. Other impacts include increased local wage rates, and increased crime and violence associated with drug and alcohol abuse (Goldenberg et al., 2008) engaged in by well-paid men who are bored and seeking stimulation (Carrington et al., 2010). Impact also include changes in economic structure (England & Albrecht, 1984), increased inequality (Tonts, 2010), increasing inflation and demand for services (Freudenburg, 1982), increasing job opportunities (Reeson et al., 2012), and skewing (toward the masculine) of the traditional ‘township’ demography (Greider & Krannich, 1985).

These changes are accompanied by destabilised business inputs (including labour) and a demand for outputs. They cause a state of uncertainty for local firms that resembles what Milliken (1987), writing on corporate strategy, calls ‘state uncertainty’. As per Milliken’s definition, state uncertainty occurs when the organisational environment is unpredictable. The broader literature on perceived environmental uncertainty (Duncan, 1972; Milliken, 1987) argues that firms react to unpredictability in the environment, such as that caused by economic and political events, as well as variations in competitor activity, changes in consumer tastes and preferences, and technological developments. A firm’s responses are based on a manager’s understanding of the importance of these events to the firm (Zahra & Bogner, 2000). Uncertainty diminishes the ability to forecast future scenarios and events and to identify the influence on the firm of these events (Lumpkin & Dess, 2001). The uncertain environment created by the establishment and rapid growth of an extractive industry is our focus. We seek to understand the dimensions of this business context, generally, but more particularly factors influencing the approaches that women in business adopt to respond.

Resource development contributes to an enhanced business atmosphere, and it can boost local business by increasing sales in some sectors (Carrington & Pereira, 2011; Petrova and Marinova, 2013). The increases depend on where the industry and the extra people — especially employees — live and spend (Hossain et al., 2013). However, the resource industry also produces negative conditions for businesses. Prominent among the factors inhibiting business prosperity in resource towns are labour shortages due to high salaries being offered by the resource industry, high staff turnover (Haslam et al., 2008; Petkova et al., 2009), increased cost of inputs (Freudenburg, 1982), and changes to market demands (Freudenburg, 1982; Jacquet, 2009). Other characteristics of the dynamic nature of resource towns are an increase in changes of business ownership and a rate of failure of small businesses that can be above the national average, as seen from research conducted in the US (Davidson, 1979). It has been reported that the entrepreneurial spirit in such communities can be low (Jacquet, 2009).

At this point, we suggest that the scenario unfolding in a resource boom can be characterised in part as a manifestation of Milliken’s ‘effect uncertainty’. That is defined as an inability to predict the impact on an organisation of a future state of the environment or environmental change. The above discussion leads to us to our first proposition.

P1: The local establishment or significant growth of a resource industry will create an uncertain environment for businesses.

Gender-specific impacts of the extractive industry

To understand the response of women in business in resource boomtowns, it is important to understand how the industry affects their socio-economic position. These impacts relate to the gendered dimensions of a number of changes associated with the industry. Key changes are population, social relations and social services. Other important changes include the labour market, business opportunities, and business hours.

Changes to the demographic profile and social relationships in resource towns have been widely documented. A population increase should increase the size of the market for most goods and services and expand social networks. In general, being a part of a social network helps people in business to build contacts and increase their customer profile ([Lee & Tsang, 2001](#); Lerner et al., 1997; [Roberts, 1989](#)). However, some dynamics of resource towns mitigate against developing strong and stable social networks. For instance, atypical working hours, a transient population (with long-distance commuting workers and fluctuating numbers with industry boom and bust cycles), and cultural gaps (as non-local workers are hired by the resource companies from urban areas) have been perceived to create a large proportion of newcomers and fragile social ties (Lovell & Critchley, 2010).

There is another particularity about the newcomers introduced by the resources industry. The masculine nature of the industry is highlighted in the boomtown literature (Ballard & Banks, 2003). Alcohol, violence, and commercial sex have been identified as an expression of the masculine nature of the industry. In resource towns, a higher than average incidence of violence, alcohol abuse, sexual offences, and domestic violence affect the behaviour of women residing in such towns (Carrington et al., 2011; Lockie, 2011; Lozeva & Marinova, 2010).

The industry changes the demographic profile of a community by bringing young male workers. This shift causes women residing in the resource towns to feel unsafe, uncomfortable, or socially isolated ([Rolfe et al., 2007](#)). It may also affect women leading businesses in the region by influencing certain business decisions, such as the hours they are comfortable operating their business and staffing decisions, like the number, age and sex of staff they feel it is prudent to employ.

Pressure can be placed on social services when an economic boom brings a rapid influx of population, inadequate resources, and high rents can make it difficult for local councils or others to provide the necessary social support staff and services for residents (Jacquet, 2009). For instance, a lack of child care is one challenge emphasised by women living in living resource towns ([Peacock, 1985](#)). If child care is not available or affordable, women's participation in economic and social spheres may be restricted ([Carrington & Pereira, 2011](#); [Jacquet, 2009](#)). It may also be the case that the lack of certain types of social services, such as child care, may induce women in business to perceive the changes associated with the industry in a certain way, which can affect their business decisions.

Even though a resource industry creates employment opportunities, barriers such as shift work, long hours, lack of flexible child care arrangements, lack of training opportunities, and inflexible attitudes of recruiters can prevent women from enjoying the benefit of working in a high paid job in the industry (Peacock 1985; Santi, 1976). On the other hand, boom conditions are good for some businesses— eateries and accommodation can flourish as a result of a boom (Jacquet, 2009). Werthmann (2009) tells of business women residing in mining towns of Burkina Faso in West Africa, where many women are engaged as petty traders and vendors of cooked food but very rarely work at the mine – in this case for superstitious, cultural reasons. Nevertheless there, and in other national contexts, resource towns offer opportunities for lucrative economic engagement. We can extend the insight of Anna et al (1999) that women leading businesses in resource towns, like those elsewhere, are more likely to run retail and service industries. Moreover, women can exploit a boom by opening a business in a niche

market (McLeod & Hovorka, 2008). One respondent in a Canadian study described her resource town as “a town of opportunity — a place for people with entrepreneurial spirit” (McLeod & Hovorka, 2008, p. 85).

Such entrepreneurial women can, however, face staffing challenges related to the dynamic context. While skilled workers and a disproportionate number of men gain jobs in a resources industry, women in small enterprises – and men in the same situation - can find it difficult to pay a competitive wage (Brush & Chaganti, 1999). It can be argued the staffing problem for women is more acute because of the nature of businesses that women tend to run and due to the sudden increase in demand that the new industry has introduced.

A challenge is also presented by the atypical working hours and shift work of the (mostly male) workforce. Both the men and their partners are affected, with the partners needing to take an additional domestic load. That can limit their social and economic participation. As well, shift work and long work hours result in sleep disorders and fatigue, which may further prevent industry workers from participating in domestic chores, thus posing an extra burden on women. Such an imbalance may also create conflict in conjugal relationships (Collis, 1999; Gibson, 1992; Pocock & van Wanrooy, 2001; Sharma, 2010).

The extent to which shift work impacts on the business opportunities and challenges for women in businesses operating in a boomtown has been little explored. However, we can infer that shift work of a large proportion of customers or of partners of staff may affect women running businesses. It may, for instance, require them to make special child care arrangements and work long hours. Such impositions may affect the way that women perceive the changes associated with the industry.

It seems evident that some of the effects of the uncertain environment for firms created by establishment or growth of a resource industry may affect firms run/managed or owned by women in a different way to those owned or run by men. The differences can be attributed to gendered dimensions of the demographic changes, labour market pressures, and specifics such as shift work patterns and pressures on social services. We argue that these gender-specific impacts are going to affect the way that women perceive changes in the environment, and the impacts will act as a moderator to influence the strategic decision making process.

P2: Certain impacts of an extractive industry-based boom influence the way that women in business in resource towns perceive the changes associated with the industry.

Internal organisational factors

Some researchers suggest that there are distinctive organisational characteristics of women’s businesses. [Fasci and Valdez \(1998\)](#) conclude that women’s businesses are characterised by flexibility and restrained growth (Maysami & Goby, 1999). Businesses owned by women are also characterised as tending to be service-oriented (Cuba et al., 1983; Hisrich & Brush, 1983; Neider, 1987; Schrier 1975; Scott, 1986; Smith et al. 1982) and more often oriented to pursue social goals (Hisrich & Brush, 1987; Chaganti, 1986). Researchers have identified a similar trend in resource boom-towns since the days of the California gold rush (circa 1850); Riley (1999) described women selling food in mining camps and running boarding houses. Such concentration in food, accommodation and other service sectors suggests that women’s businesses tend to be small in terms of revenue and employee numbers (Cuba et al., 1983; Hisrich & Brush, 1983; Scott, 1986).

Further, female entrepreneurs tend to draw on different resources to implement business strategies. For example, women tend to employ minimal external funding (Hisrich & Brush, 1987; Honig-Haftel & Martin, 1986; Neider, 1987). This tendency can be seen to relate, in part, to their perception of the availability of start-up financing and credit (Hisrich & Brush, 1984),

with challenges with cash flow management for early operations being portrayed as a barrier, as well (Hisrich & Brush, 1984).

P3: Businesses led by women exhibit different organisational characteristics to those led by men, and these differences in turn affect women's strategic decision making processes.

The difference in business characteristics influences women's perception of the business environment and their perception of how the environment might affect their business. According to Brush (1992, p.16), women perceive their businesses as "cooperative networks of relationships" rather than as separate economic units. The nature of a woman's business - including the nature of its primary product/service, target market, size, and staffing composition - will influence how they perceive the changes associated with the industry. These factors can affect both a woman's understanding of the uncertain environment and the strategies that she implements in response to impacts of the boom.

P3A: Internal organisational factors such as product/service, target market, size of a business influence the way that women in business in resource towns perceive the nature of the changes.

Gender differences in strategic decision-making

Gender differences in entrepreneurial and/or strategic behaviour are widely studied (Powell & Ansic, 1997). The dominant doctrine established by research prior to 1980 argued that women are more cautious, less confident, less aggressive, easier to persuade, and have inferior leadership and problem-solving abilities when making decisions and responding to risk than men (Johnson & Powell, 1994). These and later studies similarly found that women have a lower risk preference and higher aversion to risk than do men (Hudgens & Fatkin, 1985; Johnson & Powell, 1994; Sexton & Bowman-Upton, 1990). Women are seen to possess less confidence in their ability to make financial decisions and less confidence in gaining a positive outcome from these decisions (Estes & Hosseini, 1988; Stinerock et al., 1991; Zinkhan & Karande, 1991). A so-called 'female underperforming hypothesis' has resulted from this research (Du Rietz & Henrekson, 2000; Fasci & Valdez, 1998; Hisrich & Brush, 1983; Hisrich & Brush, 1987).

However, in the late 1980s and early 1990s, studies showed that women and men are equally capable of processing and reacting to information (Hudgens and Fatkin, 1985; Hyde, 1990; Johnson & Powell, 1994; Stinerock et al., 1991). Statistical testing of small business owners showed no differences between male and female owned businesses in terms of the innovation and risk involved in their ventures or in the strategies they choose to employ (Sonfield et al., 2001). Also shown were no differences in the resources that they draw upon to launch new ventures (Robb & Watson, 2012). Analysis has also shown strong similarities in outcomes for male and female SME owners from using networking strategies (Watson, 2012). These studies tend to attribute performance differences to a range of factors other than gender, such as business size.

Differences between men's and women's business performance, business strategies, and motivators for being in business have been detected by some researchers. Differences include that men emphasize economic goals in business, such as profit, growth, wealth creation and/or economic advancement (DeMartino & Barbato, 2003; Kent et al., 1982; Stevenson & Gumpert, 1985). A higher proportion of women say that they choose to be in business for non-financial and personal goals, such as balancing work and family (Caputo & Kolinsky, 1998; DeMartino & Barbato, 2003; Fasci & Valdez, 1998; Hisrich & Brush, 1987; Kaplan, 1988; Still & Timms, 2000). However, it has been questioned whether such gender differences can

be explained by systemic, structural and cultural barriers to women or whether they represent essential differences in motivations, predispositions and attitudes of women when it comes to risk, harnessing of resources and other personal traits (Ahl, 2006; Watson, 2002).

We infer that traits such as personal risk taking, confidence, and aggression, and capabilities such as problem solving ability may affect the way that a woman in business in a boomtown perceives the changes associated with the industry. We suggest these personal factors influence the approach of women in business to strategies and decisions in response to uncertainty. These conclusions lead us to the following proposition:

P4: The way in which women perceive the environmental uncertainty caused by a resource boom will influence the nature of strategic decision making, i.e., whether it is perceived as opportunity, threat, or challenge.

What are strategic decision-making processes?

Strategic decision-making is a process that is often viewed as a sequence of steps, phases, or routes (e.g., Fredrickson, 1984; Mintzberg et al., 1976) undertaken to match the direction of the firm to its environment (Mintzberg, 1978). This process can be influenced by factors such as a manager's individual characteristics, group dynamics, internal organisational context, and environment (Schneider & De Meyer, 1991). The latter aspect is important to this study. We argue that the uncertainty posed by the growth of a resource industry within a local economy changes the local business conditions. These changes will lead women in business to respond with a particular type of strategic decision-making process.

A set of strategic decision-making processes were identified by Mintzberg (1978); they are based on the motives of decisions, who is involved in the process, how alternatives are evaluated, the horizon, linkages, organizational goals and flexibility of modes. Other authors expand on these processes by, for example, studying contrasting roles of top managers and organisational members (Hart, 1992; Verreynne et al., 2014). Based on this research, this section proposes three approaches to strategic decision-making, namely entrepreneurial, adaptive, and conservative. The dimensions of the approaches have been conceptualised by collating characteristics of processes and typologies defined by a range of different scholars. We argue that when businesses are facing Milliken's effect uncertainty, strategic decision-making processes must respond to changes that are not well understood and cannot be accurately predicted.

Entrepreneurial strategic decision-making(SDM) approach

To succeed in uncertain environments, businesses are often required to respond organically, drawing on flexibility and informality in organisational structure (Covin & Slevin, 1989; Khandwalla, 1977; Naman & Slevin, 1993). The value of entrepreneurial responses when the business environment is unpredictable has been discussed in a significant body of literature (Covin & Slevin, 1989; Lumpkin & Dess, 1996). We define the entrepreneurial decision-making approach as a process where the methods, practices, and decision-making styles of managers are entrepreneurial in nature. Key dimension of such an approach are proactivity (Fredrickson, 1986; Lumpkin & Dess, 1996; Miller, 1987; Mintzberg, 1973), risk-taking (Lumpkin & Dess 1996; Miller 1987), innovation (Miller, 1987; Kanter, 1983; Schumpeter, 1934; 1942), flexibility (Gerwin, 1993; Gupta & Goyal, 1989), opportunity-seeking (Dess et al., 1997), assertiveness, and competitiveness (Van de Ven & Poole, 1995; Lumpkin & Dess, 1996; Fredrickson, 1986).

As discussed earlier, changes associated with the resource industry pose uncertainty in the environment in areas such as the labour market and competition. What we infer from the discussion is that business leaders need to be opportunity seekers, assertive, and risk takers to

exploit the opportunities or deal with the challenges brought by the changes associated with the industry. This approach can direct the firm as a whole toward risk-taking, innovation, and opportunity-seeking to address the changes effectively. This approach will be more likely where business managers possess personality traits and/or cognitive biases such as need for achievement (Halikias & Panayotopoulou, 2003; Miller & Droge, 1986), locus of control (Nwachukwu, 1995; Spector, 1992), optimism (Ivanova & Gibcus, 2003; McCarthy et al., 1993), risk propensity (Gupta, 1984; Papadakis, 1996), or where the nature of their business facilitates proactive innovation (Gerwin, 1993). Along with these factors, organisational factors, gender-specific impacts of the changes, and gender differences in strategic decision-making influence the way that women can perceive the market changes. We agree with Covin and Slevin (1989), who indicated that firms that have a strategic orientation that follows the entrepreneurial approach are roughly similar to those of Miles and Snow's (1978) prospector firms and Mintzberg's (1973) entrepreneurial firms. We conclude that, if women in business in boomtowns perceive the changes as positive, they are more likely to follow an entrepreneurial process of strategic decision-making to adapt to the environment.

P4A: Women in business who perceive changes associated with the industry as opportunities are more likely to use an entrepreneurial approach to strategic decision-making.

Adaptive strategic decision-making(SDM) approach

An adaptive strategic decision-making approach occurs where the methods, practices, and decision-making styles of managers are reactive in nature. A key dimension of such an approach follows Mintzberg's (1973) adaptive mode, where the firm's strategies are remedial in nature, based on monitoring the environment, with actions taken to maintain the status quo, to deal reactively with challenges rather than look for opportunities, and to make subtle changes in marketing and product quality (Chaffee, 1985; Shirley, 1982). This approach involves a high degree of external participation (i.e., participation in groups and activities outside the business) (Verreynne et al., 2014) to maintain traditional products and customers (Miles et al., 1978).

We hypothesize that the approach can be motivated by non-economic goals (Williams & Shaw, 1989) and a desire for work-life balance. Women leading businesses in boomtowns may be inclined to take this approach by internal organisational factors identified in the literature outlined above (DeMartino & Barbato, 2003; Hisrich & Brush, 1987; Chaganti, 1986). Thus, the strategic orientation of these firms aligns with Miles and Snow's (1978) analyser and reactor typology and Mintzberg's (1973) adaptive organisations.

P4B: Women in business who perceive changes associated with the industry as a challenge are more likely to use an adaptive approach to strategic decision-making.

Conservative strategic decision-making(SDM)

An even starker contrast to the entrepreneurial approach is its conceptual opposite, the conservative approach to strategic decision-making. The strategic orientation of firms following this approach resemble those of Miles and Snow's (1978) reactor typology, and Miller (1993) and Covin and Slevin's (1989) conservative organisations. Decision-makers in firms following the approach lack a response mechanism to change, and they instead maintain the same strategy despite environmental changes (Miles & Snow, 1978). They do not pursue growth or profitability, are not interested in competition (Daily & Dollinger, 1992), and are risk adverse (Covin & Slevin, 1989). Based on the characteristics of this approach, we suggest that women in businesses in boomtowns who perceive the changes associated with the industry as a threat are likely to follow a conservative strategic decision-making approach.

P4C: Women in business who perceive changes associated with the resource industry as threat are more likely to use a conservative approach to strategic decision-making.

Outcomes

The various approaches to strategic decision-making outlined above utilise different resources, include different activities, and will generally be expected to result in different business outcomes (Aram & Cowen, 1990; Covin & Slevin, 1991; Daily & Dollinger, 1992; Khandwalla, 1987; Segev, 1989). These outcomes include entry into new ventures or markets, firm growth or shrinking, or even exit. It is beyond the scope of this paper to discuss the range of business outcomes of each approach in detail, and further research is needed to reach a comprehensive conclusion. However, some likely patterns are suggested in the literature.

When a woman in business uses an entrepreneurial approach to strategic decision-making, she initiates change. A range of generally positive business outcomes has been associated with this approach, such as coping successfully (Khandwalla, 1987), growing (Covin & Slevin, 1991; Mintzberg, 1973; Schollhammer, 1982; Zahra, 1993), and improving financial performance (Zahra and Covin, 1995). In contrast, the use of an adaptive strategic decision-making approach means that a woman focuses on coping with the challenges posed by the changes associated with the industry rather than responding with new initiatives. The literature suggests that businesses following an adaptive approach will have modest business growth (Mowforth & Munt, 1998) or maintain the status quo (Miles & Snow, 1978), and they will be more able to overcome uncertainties (Aram & Cowen, 1990). When a woman in business uses a conservative approach to strategic decision-making, the business may become isolated and miss out on the possibility of taking advantage of the opportunities. Similarly, the approach may also prevent businesses from introducing new products by limiting its perspective, range, and actions (Lumpkin & Dess, 2006). Businesses adopting a conservative approach in an uncertain, resource boom context could generally be expected to have negative business outcomes, such as shrinking profit margins, perpetual instability and poor performance (Daily & Dollinger, 1992; Segev, 1989). Such businesses may exit the market in the long run (Miles & Snow, 1978). Further research could establish whether the same outcomes can be expected for women in businesses in boomtowns. We posit that:

P5: The use of different strategic decision-making processes will be associated with different business outcomes, such as growth, sustainability, or exit.

Conclusion

The framework proposed here contributes a set of bridges among key concepts from different fields - including strategic decision-making, entrepreneurship, and socio-economic impacts of extractive industries - to help articulate how women in businesses in boomtowns adapt. The framework yields a series of testable propositions, which provide a reference point for future studies. The framework identifies that internal business factors, gender-specific impacts of the boom, and gender-specific differences in strategic decision-making affect the way a woman engaged in business perceives the changes associated with the industry and consequently her strategic decision-making. The path that the woman takes and the business outcomes that it leads to will be affected by a range of factors identified in the literature reviewed, as well as various other moderators not yet identified. Characterising such factors and their influence, as well as validating this framework, require future research.

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Business Model Publicness and Socialness of the Social Enterprise

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Business Model Publicness and Socialness of the Social Enterprise

Social enterprise is important. Yet, there has been diverse understanding of the phenomenon in the literature. This paper attempts to make sense of the social enterprise phenomenon in the literature from a two-layer framework of two-by-two matrices. The first layer juxtaposes social enterprise against other organizations (a typology of organizations) and the second layer classifies different types of social enterprises (a typology of social enterprise). This framework may provide researchers with tools to develop a clear and comprehensive definition of social enterprise. For practitioners, the ability to recognize structures of different types of social enterprises may offer them guideline to design the appropriate business model to serve their purposes.

Introduction

Literature on social entrepreneurship is marked with diverse understanding of the phenomenon. Social entrepreneurship has been recognized as contested concepts (Choi and Majumdar 2014) and therefore, authors embrace different assumptions, definitions, as well as understanding on social enterprises. For example, social enterprise is associated with all organizations that conduct social activities, from Corporate Social Responsibility (CSR) of a commercial company to non-profit organizations (Kerlin 2006; Dees 1999); while on the other hand, the understanding of social enterprise is limited only to those organizations that prioritize social value creation over value capture (Doherty et al 2014). Further, social enterprises have often been considered as a non-profit operating in a business fashion (Mair and Marti 2006); yet, some other authors acknowledge that owners of social enterprises may appropriate profit (Yunus et al 2010).

To navigate the complex - and often contradictory – conceptions of social enterprises, we ask four fundamental questions to differentiate the assumptions of the nature of value creation and ownership of social enterprises present in different literature. The questions are: (a). Do social enterprises always prioritize social value creation over financial value capture or is it the mix that matter?; (b). Are owners of social enterprises more or less restricted to appropriate profit or loss?; (c). Do social enterprises involve in generating surplus for revenue or relying on public or private donation?; (d). Are owners of social enterprises interested in only recovering production costs or getting the profit from the activities?

Guided by these questions, we attempt to make sense of the understanding of social enterprises in the literature from a comprehensive two-layer framework of two-by-two matrices (figure 1). The first layer juxtaposes social enterprises against other organization and the second layer identifies different type of social enterprises.

This framework may provide researchers with tools to develop a clear and comprehensive definition of social enterprises (Sudabby 2010). Researchers may also identify different types of social enterprises, and therefore, they may be able to investigate how the differences in the structure of social enterprises may affect the performance – both financial and social. For practitioners and social entrepreneurs, the ability to recognize the structure of different types of social enterprises may provide them with guidelines to design a more suitable business model to serve their purposes.

Literature Review

Social entrepreneurship literature has been marked with diverse understanding of the social enterprise phenomenon. For example, authors include any organizations with social value

creation activities – both for-profit and not-for-profit – as social enterprises. Kerlin (2006) indicates that the conception of social enterprises in the United States span from the Corporate Social Responsibility (CSR) programs conducted by commercial companies to activities by non-profit organizations employing market-based approach. Dees (1998) argues that social enterprises are nonprofits that seek additional income from operating like profit organizations.

Others restrict the conception of social enterprises specifically to those organizations that prioritize social value creation over value capture. Doherty et al (2014), for example, argues that high attention to social value creation over value capture is evident in social enterprises. Santos (2012) argues that social enterprises focus on creating social value, especially in sectors neglected by the government and the private sector. Similarly, Chell (2007) argues that the centrality of social enterprise's mission distinguish them from their commercial counterparts. Mair and Marti (2006) argue that economic value creation should be secondary to social wealth creation.

Social enterprises have also been seen to resemble private organizations because their owners appropriate profit. Social entrepreneurship authors (Mair and Marti 2006; Peredo and McLean 2006) highlighted the utilization of business approaches in social enterprises. Using business practices, social enterprises capture financial value for shareholders (Yunus et al 2010). For example, Defourny and Nyssens (2011) include European cooperatives as social enterprises. Generating profit through trading, cooperatives also distribute their profit to their members.

Yet, some others believe that social enterprises are restricted from doing so (Defourny and Nyssens 2011); while some others believe that social enterprises are still allowed to appropriate profit as long as it is not the primary motive (EMES Approach). Nicholls (2006) argues that social enterprises are non-profits and therefore they tend to “re-invest” their profit into their operation. Defourny and Nyssens (2011) report that in some European countries, profit of social enterprises is capped below their commercial counterparts.

Authors also vary in their understanding of the financial motivation of social entrepreneurs. For example, although generally social entrepreneurs have less financial motivation than their commercial counterparts (Mair and Marti 2006), some authors indicate that financial motivation also drives owners of social enterprises (Yunus et al 2010).

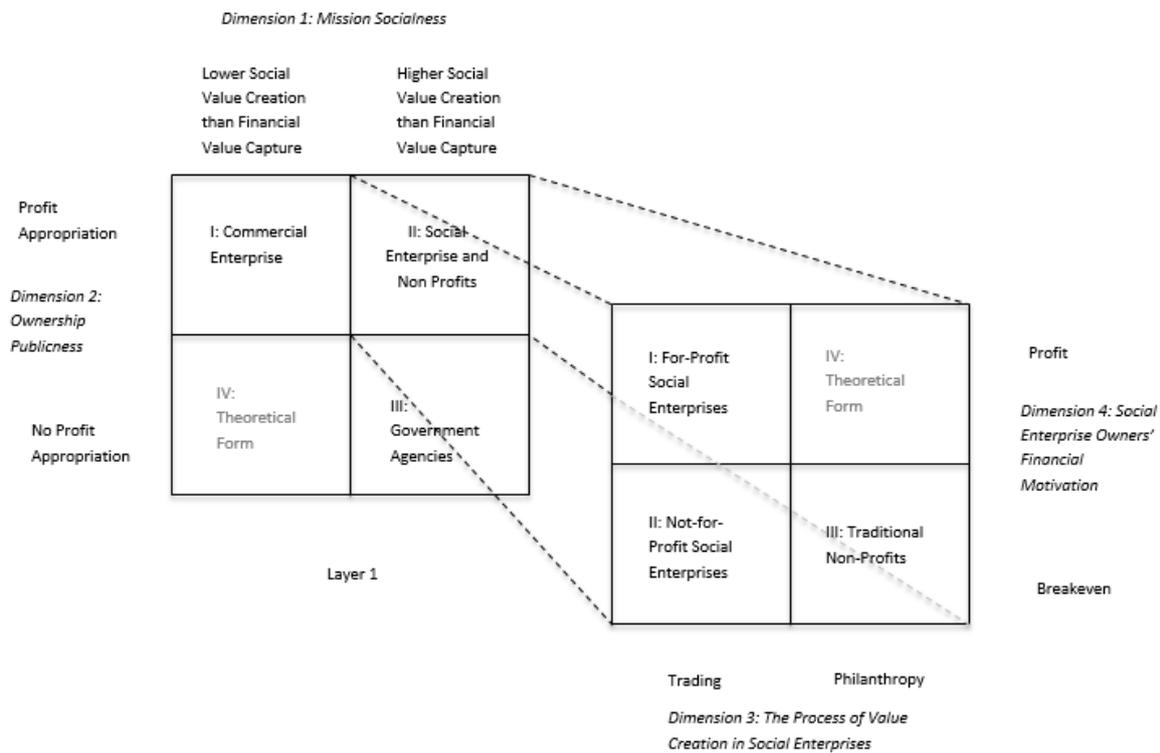
Further, social entrepreneurship literature is diverse in understanding the ways in which social enterprise deliver values. For example, authors believe that social enterprises prioritize trading in order to achieve their mission (Nicholls 2006; Alter 2002; Haugh and Tracey 2004); while some other highlights that some social enterprises are non-profits, such as charity, and rely their income from philanthropy donation (Dees 1998).

Therefore, to navigate the complex - and often contradictory – conceptions of social enterprises, we ask four fundamental questions to differentiate the assumptions of the nature of value creation and ownership of social enterprises present in the literature. The questions are: (a). Do social enterprises always prioritize social value creation over financial value capture or is it the mix that matter?; (b). Are owners of social enterprises more or less restricted to appropriate profit or loss?; (c). Do social enterprises involve in generating surplus for revenue or relying on public or private donation?; (d). Are owners of social enterprises interested in only recovering production costs or getting the profit from the activities?

Guided by these questions, we make sense of the diverse understanding of social enterprise phenomenon in the literature via a comprehensive two-layer of two-by-two matrix (figure 1). The first layer juxtaposes social enterprises against other organization and the second layer identifies different type of social enterprises.

The following discussion will outline each dimension of each layer and the constructs underlying the development of each dimension. The *first section* below will discuss the components of the first layer: mission socialness and ownership publicness. This will be followed with the *second section*, discussion of the dimensions of the second layer: the process of value creation in social enterprises and social enterprise owners' financial motivation.

Figure 1. The Typology of Organizations and Social Enterprises



First Layer: The Typology of Organizations

The first layer discusses the typology of organizations. The aim of this discussion is to provide a framework to distinguish social enterprise against other organizations. This section will discuss the conceptual foundations of the mission socialness and the ownership publicness dimensions.

Dimension 1: Mission Socialness of Organizations

We define mission socialness of organizations as *the trade-off (or the ratio) of social value creation over financial value capture*. This section will outline what we mean by *social value creation (SVC)*, *financial value capture (FVC)*, and the ways we make sense of the *trade-off* between social value creation and financial value capture.

Management authors have recently started to take a look at the ways in which organizations provide contribution to the social problems (Porter and Kramer 2011). In fact, there seems to be a growing attention in the literature in making sense of the social purpose of organizations (Hollensbe et al 2014). Yet, research on the extent to which organizations create (or destruct) social values have been underdeveloped. This is due to the fact that authors of business organizations have been operating under the assumption that the sole purpose of a business is to add to shareholder values

Despite this absence within the business literature, discussions on social value creation have been present among non-profit authors. Yet, the difficulty to measure social change lies in the fact that outputs of social interventions are not comparable (Kroeger and Weber 2014). Since a theory of change may need to be suited to a particular social problem setting, indicators to measure a successful theory of change may be different from one setting to the other (Weiss 1997). For example, measuring a successful behavior change in health promotion program may be different from measuring a successful adoption of disaster risk reduction mechanism in a disaster-prone area. Thus the difficulty of creating a universal definition of created social value.

To overcome this challenge, a recent effort to develop a conceptual framework to compare different social value creation initiatives is worth to consider (Kroeger and Weber 2014), and for our purpose in making sense of the idea of social value creation within the socialness dimension we propose to follow the logic of the authors.

Our definition of social value creation (SVC) refers to the content of the created value in the society, as opposed to its process (Lepak et al 2007). To avoid tautology, we define social value creation as the degree to which an organization managed to reduce social need of people where a social intervention is introduced (Kroeger and Weber 2014). Borrowing from the positive psychology literature (Seligman and Csikszentmihalyi 2000), Kroeger and Weber (2014: 519-522) propose to adopt the changes in the Subjective Well Being (SWB) indicators as a measure of created social value across different social interventions. It is argued that various social interventions may have different means and instruments of implementation; yet at the end, it expects to improve the well-being of people (Kroeger and Weber 2014). Thus, measuring the changes in the well-being indicators would serve the purpose.

The authors argue that Life Satisfaction indicators (LS) – a cognitive Subjective Well Being indicator – is useful as a universal basis to measure created social value from different social interventions because it is assessed at the level of an individual (Layard 2010); “highly personal experience” (Campbell et al 1976: 10); and “refers to the needs of human beings” (Kroeger and Weber 2014: 521). All of these encompass a definition of LS as “a result of an individual’s perceived discrepancy between his or her aspired and achieved levels of need” (Kroeger and Weber 2014: 520). Although LS is subjective, it also correlates with the Psychological Well Being (PWB) indicators (Ryff and Keyes 1995) that is deductively developed from various theoretical framework in psychology (Ryff 1995), and thus, indicating the validity of the subjective measure.

LS indicators measure global or overall life satisfaction of individuals; and the authors believe that a more accurate measurement of created social value could be achieved via the measurement of the improvement of Domain Satisfaction (DS) – separate “partitions” of Life Satisfaction measures (Rojas 2006: 469). DS is “the satisfaction an individual feels with his or her perceived situation related to a particular need” (Kroeger and Weber 2014: 521) and therefore it is considered closer to a particular social intervention of an organization. Further creation of a DS index – an aggregate of satisfaction measures from different partitions (or domains that correlate with particular needs of the beneficiaries of a particular social intervention) – may meaningfully approximate the needs to measure more accurate global LS (Kroeger and Weber 2014: 522).

While all organizations are assumed to create social value (Porter and Kramer 2011; Hollensbe et al 2014), they also – to an extent – capture values (Mizik and Jacobson 2003). Value capture, a construct widely discussed in the Strategic Management literature, refers to the ability to appropriate values created by the organizations or firms (Mizik and Jacobson 2003; Bowman

and Ambrosini 2000; Lepak et al 2007; James et al 2013; March 1991). Created values have often needed to be shared with the society, stakeholders, and even competitors (Lepak et al 2007), and it is argued that in order to sustain, business firms has to be able to appropriate the created values (Mizik and Jacobson 2003). Additionally, organizations can capture more, equal, or less values than it creates (Brandenburger and Nalebuff 1995).

The relationship between value creation and value capture has been explored in various literatures (Santos 2013; Lavie 2007; Mizik and Jacobson 2003). It is argued that in most cases organizations have to trade-off value creation and value capture (Mizik and Jacobson 2003; Porter 1996; Miles and Snow 1978; Boulding and Lee 1994); thus, it is difficult for organizations to maximize both value creation and value capture at the same time (Santos 2013: 338). Within the non-profit context, for example, the lack of ability of poor customers to pay for provided goods or services may make value capture difficult (Seelos and Mair 2005). Thus, in this situation, non-profit organizations have to trade off value capture for social value creation (value capture = 0; social value creation = 1). On other extreme conditions attempts to capture value without creating social value may happen in corrupt societies. Corrupt and mafia organizations, for example, may trade value capture off with the creation of social value that benefit the society (social value creation = 0; value capture = 1); thus, appropriating all values from all activities conducted in a society. Taking into account the dynamics between social value creation and value capture, Santos (2013) further suggests organizations to be explicit in their social value creation or value capture orientation. It is argued that being explicit in their orientation will help establish organizational identity and provide direction in organizational decision-making; by doing so, organizations will be able to mitigate conflicting choices during their courses of action (Santos 2013: 338).

Understanding the dynamics and the relationship between value creation and value capture, we propose to measure the trade-off (or the ratio) between social value creation and financial value capture across different type of organizations in order to make sense of different mission socialness of organizations. *High mission socialness organizations* are those that score social value creation higher than financial value capture (i.e. $SVC/FVC > 1$). Organizations belong to this category prioritize activities that promote the creation of values that benefit the targeted society. Although there may be some value capture activities, in these organizations the created social value exceeds the appropriation of those values. Non-profits belong to this category because they produce social value without any interest to capture the created values. Similarly, government agencies are also in this category because of the same reasons.

On the other hand, *low mission socialness organizations* are those that score the social value creation lower than financial value capture (i.e. $SVC/FVC < 1$). Organizations belong to this category may still improve the well-being of people (e.g. producing medicine for certain terminal illness), however their value capture score may exceed the former (i.e. via patent – selling the medicine only to premium customers instead of to the poor). Commercial companies fit into this category.

Dimension 2: Ownership Publicness of Organizations

We define ownership publicness as *the degree to which owners of an organization are restricted from accumulating wealth from the activities conducted by the organization*. *Profit Appropriation* (low degree ownership publicness, private-like) is when the owners have strong motive to accumulate wealth from the organization; and they are not restricted to do so. *No Profit Appropriation* (high degree ownership publicness, public-like) is when the owners, regardless of their intention, are restricted to appropriate these gains.

This section will outline the foundation of publicness theory that becomes the underlying framework for the development of the ownership publicness dimension. Further, drawing from the argument of private property theorists (Demsetz 1967), we propose to distinguish the ownership characteristics of private-like organizations (*profit appropriation*) and public-like organizations (*no profit appropriation*). The argument of private property theorists has often been argued as the theoretical foundation of the ownership dimension in the publicness theory (Perry and Rainey 1988; Andrews et al 2011).

Publicness theory has been widely discussed in the public administration literature (Bozeman 1987; Rainey 1979; Rainey, Backoff, and Levine 1976; Lewis and Zolin 2004). Discussion on a publicness of an organization stems from the attempt to distinguish the differences between public and private organizations (Bozeman 1987). Anchoring the argument to the work on the political economy of public organizations (Wamsley and Zald 1973), publicness theorists argues that organizations are, in addition to customers and market demands, also subject to constrain from political demands and regulations; it is believed that public organizations receive higher political demands than their private counterparts (Dahl and Lindblom 1953).

Publicness theory further argues that public and private organizations are distinguishable from the three important aspects: ownership, funding, and control (Perry and Rainey 1988). Mode of control of an organization refers to the governance structure of the organizations, i.e. the ways in which decision-making is made in an organization (Perry and Rainey 1988), and therefore it often implies the legal arrangement of the organizations. For example, a limited liability company may have stronger shareholder control than a public organization. On the other hand, mode of control in public organization is often set via political mechanism and regulations, e.g. in the form of parliamentary hearing. However, we are less interested in the mode of control of organizations because legal arrangements of organizations vary from one place to the other. Thus, in order to achieve our objective, using the mode of control as an aspect to distinguish organizations may create unnecessary complications.

Moreover, funding refers to the ways in which the organization receive fund to materialize their value propositions (Bozeman 1987). In the business model literature, funding aspect of an organization is similar to the revenue stream that an organization receives from customers or other parties and may also be associated with the value structure of an organization (George and Bock 2011).

Thus, private organizations receive funding from private individuals and their customers; while public organizations receive funding from the taxpayers. Funding publicness aspect is important to make sense different ways social enterprises generate revenue (see dimension 3 below).

Ownership characteristic of an organization has been long accepted as a distinguishing factor between private and public organizations (Perry and Rainey 1988). The ways authors define ownership aspect of an organization stems from the logic of private property theories (Demsetz 1967; Alchian and Demsetz 1972; Hart and Moore 1990). Authors argue that private property is only possible when people could internalize the potential benefit and cost in the society (Demsetz 1967: 350). Thus, owners of the property rights possess the rights – i.e. receiving consent from other people – to allow themselves to act in ways of their own choosing – for example, benefit themselves (i.e. accumulating wealth) or harm others (i.e. excluding competitors) (Demsetz 1967: 347). The locus of this perspective emphasizes the exclusivity of the owners of the property rights to exclude other people from exercising similar actions.

We argue that this particular right to exclude has become the main characteristics of organizations with *private-like ownership*. Shareholders have the exclusivity to appropriate

profit from the value creation process – whom other people are excluded from exercising similar action. In this case, the motive of shareholders to accumulate profit is warranted by the fact that the owners are endowed with property rights. Literature of social entrepreneurship has indicated that social and commercial enterprises have strong ownership resemblance. For example, Mair and Marti (2006) and Peredo and McLean (2009) – both of them argue that social enterprises embrace business methods.

On the contrary, in a *public-like organization*, property rights is diffused and therefore everyone can exercise their rights (i.e. the communal rights) (Demsetz 1967). Since the owner is the public, or the taxpayers, no one involved in the organizations are allowed to exclude other people from exercising their communal rights (Demsetz 1967: 354). This logic deems the internalization of benefit (i.e. accumulating wealth) or cost (i.e. harming competitors) less possible in public-like organizations. Thus understood, even when owners of public-like organizations have motivation to accumulate individual wealth, their action cannot be warranted because of the nature of diffused property rights. In this case, any action to accumulate individual wealth in a public-like organization would be seen as a corrupt action and may be considered violating the basic principles of the communal rights – no one is allowed to exclude others from exercising their communal rights.

Subsequently, owners of private- and public-like organizations have different degree of restriction to accumulate wealth. We believe that owners of private-like organizations are less restricted to accumulate wealth, primarily due to the logic of private property rights (receiving warrant to exclude others from exercising wealth accumulation activities). Having less restricted, owners of private-like organization could materialize their motivation to *appropriate profit*.

On the other hand, in public-like organizations – due to the difficulties to exclude other people from exercising their rights – materializing owners' intention to appropriate profit is less possible. Although negotiation to get profit may occur, the transaction cost is going to be extremely high so it may be counterproductive to pursue (Demsetz 1967). Thus, owners of public-like organizations tend to *not appropriate profit*.

Second Layer: The Typology of Social Enterprises

The second layer discusses the typology of social enterprises. The aim of this discussion is to provide a framework to distinguish different types of social enterprises. This section will discuss the dimensions of the second layer's matrix: the value creation process in social enterprise and the social enterprise owners' financial motivation.

Dimension 3: The Value Creation Process in Social Enterprises

This section outlines the dimension where different social enterprises have different ways (i.e. the process) of creating values (Lepak et al 2007). We highlight that social enterprises vary in this dimension from seeking revenue via *trading* at one end to via *philanthropy* at the other end.

Since value creation process overlaps with the funding aspect of Publicness Theory – due to the fact that both construct refers to the way organization materializes their value proposition – we will use the logic of Publicness Theory to further make sense of this particular dimension.

Funding publicness highlights the ways organization receive the revenue to deliver their value proposition. Originating in the public administration research, funding publicness distinguish

the characteristics of the revenue streams between public and private organizations (Bozeman 1987; Andrews et al 2011; Lewis and Zolin 2004). It is argued that public organizations receive funding from the taxpayers, where private organizations receive funding from their market-based activities (Perry and Rainey 1988). Private organizations receive revenue surplus from trading – where they deliver values (products and services) to customers higher than the cost of production. Public organizations, on the other hand, provide values to taxpayers (e.g. public park) equals to the cost of the production (e.g. the cost of producing a public park) and seek the revenue from taxpayers.

Literature in social entrepreneurship has highlighted the resembling public-private mode of revenue generation among social enterprises (Kerlin 2006; Dees 1998; Mair and Marti 2006; Nicholls 2006). It has been argued that some social enterprises rely on market-based revenue. The literature describes that social enterprises are those organizations that are involved in *trading* activities (Barraket et al 2013).

Yet, the literature also explicitly includes non-profits, or those organizations that rely their revenue from philanthropic activities (such as donation from private donors or donor organizations), as social enterprises (Galera and Borzaga 2009). These social enterprises' major sources of revenue are from donor organizations (i.e. government funding) (ref) or individual donor and members.

Dimension 4: Social Enterprise Owners' Financial Motivation

This section outlines the ownership-related dimension among different social enterprises. We define this dimension as the profit orientation of the owners of social enterprises; which varies from appropriating *profit* at one end and achieving *breakeven* at the other end. Much business literature has indicated on the existence of private business where its owners are more or less interested in profit appropriation (ref). It is argued that financial surplus of an organization may not always be the primary motive of corporate owners: while owners of traditional private organizations would expect to have more return on investment from their capital, some owners are less interested in profit appropriation, for example older family members in family-owned SMEs or those family members who are interested in family control instead of equity (Romano et al 2000). Further, within the entrepreneurship literature, it has been argued that entrepreneurs' motivation also vary and are impacting to the ways the enterprise is structured; while some have strong intention to generate individual profit, some others are socially-driven causes (Fauchart and Gruber 2011).

As private-like organization – in the sense that its owners are less restricted to appropriate profit – social enterprises have also shown similar pattern. Some owners of social enterprises appropriate the surplus as *profit* and distribute the dividend among the shareholder of the enterprise. For example, Yunus et al (2010) indicates the model of social enterprise where owners are interested to reclaim their investment. These social enterprises often operate – and, in many cases, have legal structure – as private entity. The only difference they have with commercial enterprise is the fact that they have higher ratio of mission socialness.

Other authors highlighted the fact that owners of social enterprise are less interested with profit appropriation (Defourny and Nyssens 2011). Some social enterprises 're-invest' the surplus to the organization (Nicholls 2006). Some other social enterprises do not even attempt generating surplus from their operation (Galera and Borzaga 2009). These social enterprises have similar characteristics in maintaining to achieve *breakeven point* in their operation.

The Typologies – Using The Framework

This two-layer framework provides two typologies – of organizations and of social enterprises. The first layer provides a framework to distinguish social enterprise against other different organizations; the first layer provides a framework to classify different types of social enterprises. This section discusses the typologies.

The first layer provides a typology of organizations and juxtaposes social enterprises against other organization (figure 1). In contrast to other organizations, social enterprises are recognized as organizations that have *high mission socialness* and *low ownership publicness*. Social enterprises provide intervention in neglected areas, and therefore, in difficult situations, social entrepreneurs trade-off social value creation with financial value capture (Santos 2013). This essential characteristic (high mission socialness) distinguishes social enterprise from their commercial counterpart.

Yet, similar to commercial enterprise, owners of social enterprises are less restricted to accumulate profit from their organizational activity (*low ownership publicness*).

Almost all conceptions of social enterprise in the literature display these implicit assumptions. For example, Mair and Marti (2006), Nicholls (2006) belong to this category due to their focus on high mission socialness of social enterprises. In combination with high mission socialness, they also believe that adopting business practice - and thus being *private-like* – is the distinguishing characteristic of social enterprises.

Further, the second layer provides a typology of social enterprises (figure 1). Four types of social enterprises are identified from this configuration. The organizations in the *first quadrant* are those social enterprises with a combination of trading and profit. This is the “*For-Profit Social Enterprises*”. This particular type of social enterprise generates surplus of revenue from the differences between the selling price and the cost of production (selling > cost). Social enterprises in this category often need to provide new way to sell products and services in order to increase the well being of a society, especially in the neglected area (Santos 2013). Moreover, owners of this particular type of social enterprise appropriate profit. In the social entrepreneurship literature, Yunus et al (2010) among other authors, identify the existence of this particular type of social enterprise. Yunus et al (2010) argues that ‘social business’ – where its owners seek to recover their investment – is a for-profit type of social enterprise.

This type of social enterprise may look very similar to a commercial enterprise since the structure of the former resembles the latter (i.e. the owners seek profit and the company does trading). The only difference is that for-profit social enterprises have higher mission socialness, and it is evident from the trade-off between created social value and financial value capture.

An empirical example of this category is Barefoot Power (<http://www.barefootpower.com/>), a Sydney-based Social Enterprise providing affordable alternative energy for poor rural communities. The mission of the company is to ‘help low income families to break their dependence on inefficient, expensive and harmful light sources by giving them cleaner and cheaper options’. Barefoot Power conducts trading through the production and distribution of low cost and clean source of energy (i.e LED reading lamp as a replacement of traditional kerosene lamp). Their high mission socialness is illustrated from their priority to provide clean light sources to rural market (i.e. improving significantly the life satisfaction of rural people) and thus, they are prepared to receive thin profit margin; their priority is different than most commercial companies which would aim to enter a more highly profitable, commercial and urban market (as most commercial companies – e.g. Philips, GE, etc – would do).

Similar to commercial enterprises, owners of Barefoot Power are investors that have provided fund to get capital return from the trading activities (<http://www.startupsmart.com.au/growth/social-enterprise-barefoot-power-raises-58-million-series-b-round/201207186961.html>).

Social enterprises in *the second quadrant* are those that display combined characteristics of doing trading and achieve breakeven. We propose to call this category “*Not-for-Profit Social Enterprises*”. Although this type of social enterprise conducts trading to generate surplus of revenue (selling > cost), their owners are less interested in profit appropriation. Many social enterprises on this category “re-invest” the profit back to the operation of the organizations. Those authors in the social entrepreneurship literature – whom Defourny and Nyssens (2011) label as “commercial non-profit approach” – belongs to this category.

An empirical example of this category would be the Melbourne-based Social Enterprise, Thank You Movement (<http://thankyou.co/>). This not-for-profit social enterprise sells bottled water in supermarkets at market price, as well as body care and food products. The surplus from the trading activities is devoted to finance safe water, health, and food projects in developing nations. The company asserts that they do not have shareholders and investors to appropriate the profit (<http://thankyou.co/movement/faq>). By doing this, Thank You company has high mission socialness because there is no financial value capture made from their business activities.

The third quadrant refers to social enterprises with a combination of philanthropy and breakeven configurations. Those “*Traditional Non-Profits*” belong to this category. We argue that traditional non-profits are essentially social enterprises because they are distinctive from other existing organizations from their high mission socialness. For example, it is argued that salient characteristics of a social enterprise are pursuing social goals, having non-profit distribution constraint, and power to stakeholders (Galera and Borzaga 2009) – all of which are also characteristics of traditional non-profits. Owners of traditional non-profits are usually members of the organizations, or stakeholders, and are less interested in profit appropriation. Most of the cases, owners of traditional non-profit only expect to recover the cost of operation of the non-profits to ensure sustainable operation of the institution.

An empirical example of this particular type is an Ashden Social Entrepreneurship Award recipient, the Ibeka Foundation (<http://www.ashden.org/winners/ibeka12>). An Indonesia-based rural micro-hydro electrification social enterprise, Ibeka foundation creates social value in the neglected area where the government is unable to provide grid-electricity in order to improve the living condition of the rural poor. Ibeka receives most of the revenues in the form of grants from development agencies (such as UNDP, JICA, etc). Ibeka does not conduct any trading activities. Owners of Ibeka, social activists, are not interested to secure profit from the operation of the foundation (ref).

Further, some of the current seemingly distinctive social enterprises apparently take the traditional non-profit form, such as Kiva – a web-based microfinance social enterprise (<http://www.kiva.org>). We argue that Kiva belongs to traditional non-profits; however, because they utilize innovative technology (crowdsourcing) to generate their revenue, they look different from other traditional non-profits – e.g. most traditional non-profits generate their revenue from traditional fundraising. However, once other non-profits start copying their innovation, Kiva will no longer be unique.

The fourth quadrant is the non-existent theoretical type of social enterprise with a combination of philanthropy and profit. Combination of philanthropy and profit is difficult to achieve since most donor organizations often require non-profit operation.

Theoretical and Practical Implications

These typologies provide framework for researchers to develop a definition of social enterprise. By providing a comprehensive framework that juxtapose social enterprise from other organization and recognize different types of social enterprises, researchers would be able to develop a clear definition of social enterprise. We believe it is necessary to develop a clear and comprehensive construct of the social enterprise phenomenon. A clear construct of social enterprise has to capture the essential characteristics of the phenomenon, avoid tautology, and has to be parsimonious (Sudabby 2010). It has to be narrow enough in order to be distinctive (i.e. able to distinguish a social enterprise from other organizations), yet at the same time it has to be broad enough to capture different categories of the phenomenon (i.e. the typology of social enterprises) (Sudabby 2010: 348). This framework allows researcher to meet the criteria.

The typology of social enterprises would also help practitioners (social entrepreneurs) to choose for appropriate business models. It is argued that there are different factors affecting the formation of a profit or non-profit model in a social organization – for example, the nature of social needs, the amount of required resources, the scope of raising capital, and the ability to capture economic value (Mair and Marti 2006). Yet, thus far, there has been less clear identification of the characteristics and dimensions of types of social enterprises that may help guide practitioners. This framework provides social entrepreneurs with comprehensive options by giving emphasizes on two essential aspects: the process of value creation and the owners' financial motivation.

Conclusion

Social enterprise is important for the society. However, many social entrepreneurs fail to develop appropriate business model because there have been lack of guidelines and understanding of what constitute social enterprises. Literature on social enterprise has been divergent and complex. There are different conceptions of social enterprises in the literature based on different assumptions.

By asking four fundamental questions, this paper seeks to make sense social enterprise phenomenon in the literature via a two-layer of two-by-two matrices. The first layer of the matrix constructs a typology of organizations in an attempt to juxtapose social enterprise against different organizations. The second layer of the matrix identifies a typology of social enterprise.

This paper provides social enterprise researchers with a framework to define social enterprise. For practitioners, this framework helps them to identify comprehensive characteristics of social enterprise in order to develop appropriate business model.

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Strategic Renewal through Design Led Innovation: Findings from Embedded Practice

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Strategic Renewal through Design Led Innovation: Findings from Embedded Practice

Abstract

Strategic Renewal has been the subject of research in large organisations but has received relatively little attention in small and medium enterprises. Using case study examples of small and medium manufacturing firms, this paper presents the findings from a longitudinal action research project where participating companies explored design led innovation processes to find new ways to renew their businesses. Specifically our findings indicate that when designers act as innovation catalysts in embedded longitudinal action research, SMEs engage in strategic renewal, gain a deeper appreciation of their customers, become more aware of the value proposition of the company and engage in new practices to improve their competitive advantage.

Key Words: strategic renewal, innovation catalysts, design-led innovation, action research

INTRODUCTION

The Australian manufacturing sector plays a significant role in the economy and is a critical component of value chains across many industries and sectors. In Australia's high cost environment, small and medium sized manufacturing enterprises need to respond with highly customised goods and services based on low volume, and high value manufacturing. Some manufacturing firms in selected industries reinventing their business models, with realignment of customers and a positioning of products and services to benefit from increased connectivity and global markets for new customers. Other companies are becoming less competitive, losing market share and are uncertain about how to achieve strategic renewal in these dynamic market conditions.

Small to medium sized enterprises (SMEs) are the largest group of firms in the Australian context and comprise the majority of all businesses across the world. We define an SME according to the Australian Bureau of Statistics (ABS) definition as that of an independently owned and managed firm with fewer than 200 employees (ABS, 2005). Growth in SMEs is important because it helps to generate enhanced job creation and also strengthens the overall economy (OECD, 2010a). The challenge for many small and medium enterprises is how to survive in an increasingly global marketplace where competing on price is not a viable proposition. Previous research suggests that small-firm management might fruitfully focus on differentiating effective and ineffective management practices in various organizational and environmental contexts (Covin & Slevin, 1989). Innovation remains a critical issue in this process as it offers firms a foundation for greater product differentiation and market entry (OECD, 2010b).

The value of design to business is well-established internationally and enacted through programs such as the United Kingdom's Design Council Designing Demand, where an evaluation of its Designing Demand program, found the return on investment was 25:1; New Zealand's Better by Design program (2010) which since its 2005 establishment, is reported to have achieved its target of 5x50x500x5 (in five years, with 50 participating companies delivering NZ\$500 in exports and growing at five times the NZ GDP rate), and with industry demand, had expanded its offerings. Although a significant amount of literature focuses on the value of design to business, often much of this work has focused on the value of design to new product development or on the evaluation of specific programs aimed at enhancing the competitiveness of firms through product and design. Within Australia, the investigation of design and its contribution to strategy is a relatively new approach to innovation that is slowly being explored in some Australian states, namely New South Wales, Victoria and South

Australia. The findings from this study will contribute to a deeper and broader understanding of the implementation of design methods and process as contributions to strategic renewal of SMEs.

Research has identified that as a result of participation in a design intervention program, some companies have engaged in strategic renewal and new business models resulting in improved business performance (Teece, 2010; Zott & Amit, 2010). For example we use Agarwal & Helfat's (2009: 282) definition of strategic renewal as the "potential to substantially affect long-term prospects of a company, the refreshment or replacement of attributes of an organisation and aims to provide a foundation for future growth and development". The research question we are investigating is: how do firms with the purpose of improving their business respond to a design-led innovation program.

The contribution we are seeking to make is to increase knowledge about the processes of design-led approach to innovation and the ways that the benefits and impact of such interventions on the activities and business of small and medium enterprises contribute to strategic renewal. First we present information about a design-led innovation intervention program implemented in SME's by innovation catalysts. Second, we discuss the characteristics of companies that participated in this program and briefly discuss the findings from the interventions by a design innovation catalyst in a twelve month embedded practice outcomes. Third we identify the common perception of value of the program to the firms and the contributions to strategic renewal.

DESIGN LED INNOVATION

Design can help businesses innovate through processes like design led innovation and the generation of new business models (Teece, 2010; Veganti, 2010, Zott & Amit, 2010). Design-led innovation (DLI) is an integrative business process to assist companies to develop a sustainable competitive advantage by capturing the strategic value that design can provide in a business environment (Bucolo & Matthews, 2010). A company can be considered 'design-led' or 'design integrated' by employing and integrating design at a holistic business level. DLI is a relatively new field of knowledge that has grown from a need to reposition and redefine the way design is valued and implemented in business. Maintaining the fundamental principles of design in the evolution of its application in industry and business, the DLI framework builds upon Beckman and Barry's (2009) design thinking framework and core design principles, such as cyclical iterations, prototyping and empathising. In design led innovation, the core design principles have been extrapolated to strategy-level business applications, allowing a vision and value proposition of the business to inform design decisions.

The conceptual Design-led Innovation Framework (Figure 1) illustrates an iterative process that can assist companies to explore, capture and realise the strategic value that design can bring to a business. The framework is the relationship between operational and strategic activities within a business, and the internal and external focus of these activities. These four elements make up the axes of the framework. The underlying opportunity or value proposition is positioned at the centre of these axes, and is used as the fundamental unifying theme to bring together all sections of a business.

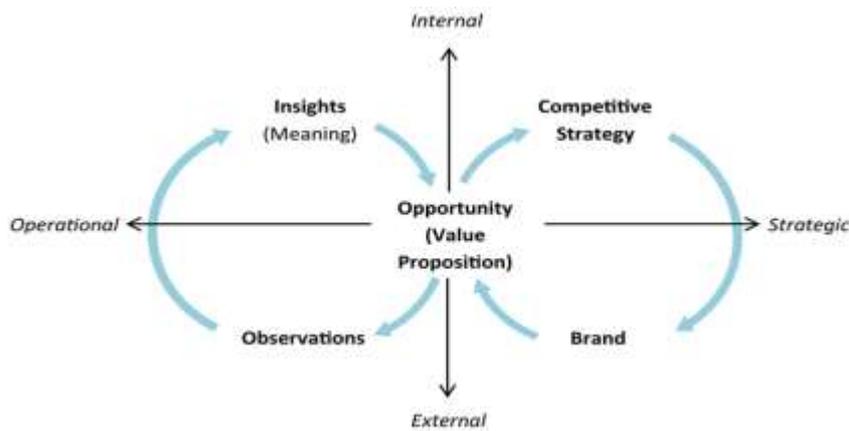


Figure 1 The Design Led Innovation Framework (Bucolo and Matthews, 2011)

Recent calls by Australian governments at state and federal levels have recognised that, for our manufacturing sector to compete effectively on the world stage, design is a pathway to improved productivity that needs to be included in our innovation approach (Government of South Australia, 2012; Roos, 2012; Victorian Government, 2012; NSW Government, 2012). In addition, the Report of The Prime Minister’s Manufacturing Taskforce specifically highlighted the importance of the adoption of design as strategy as a way to support this sector (Commonwealth of Australia, 2012). Australia needs to better address the practical implications on how to shape its future to be competitive – and it needs to look at design as central to its innovation drive (Livingstone, 2012).

The Australian Government recently established a business development program with funding to cover of some of the salary costs of engaging a researcher, with placement for a period of two to twelve months to accelerate the adoption of new ideas and technologies by Australian SMEs and increase the competitiveness of Australian SMEs. Other specific program objectives include to help break down the cultural divide between Australian SMEs and the research sector, stimulate the dissemination of expertise from research organisations to industry, and to stimulate the dissemination of industry knowledge back into the research community.

Research has identified the potential of design management programs where design consultants have used processes and methods to assist firms to capture deep customer insights, restructure their business and increase the firm’s competitiveness (Moultrie, Clarkson & Probert, 2007). This research investigates the use of catalysts embedded in small and medium enterprises (Martin, 2011) and explores the processes and outcomes in firms engaged in design led innovation processes for strategic renewal (Dell’Era & Verganti, 2009). Design led innovation brings human centred design perspectives to (1) what will provide the customers and stakeholders with the most desirable value, (ii) what is technologically feasible and (iii) what the business model needs to support this proposition (Brown, 2008).

Strategic Renewal in Small and Medium Enterprises

Strategic Renewal or “the transformation of the organisation of the organisation through renewal of the key ideas on which they are built” (Guth & Ginsberg 1990:5) has been the subject of research in large organisations but has received relatively little attention in small and medium enterprises, despite the prevalence of SMEs nationally and internationally. Enterprises often have well-developed routines that have shaped the processes for their past success, but in fast changing environments these practices may also be the cause of rigidities that inhibit innovation (Leonard-Barton, 1992). Strategic renewal is one of the forms of

strategic entrepreneurship identified in the corporate entrepreneurship literature where it is seen as similar to but distinct from, sustained regeneration, domain redefinition, organisational rejuvenation and business model reconstruction (Morris, Kuratko & Covin, 2008: 88-93).

Strategic Renewal can be understood as being both incremental and discontinuous, and can be carried out in multiple dimensions of content and process of business, from a focus on strategy that relates to the long-term focus of the firm and its prospects, and the potential to effect the organizations long term prospects, such as reconfiguration of current attributes, with or without additions or deletions. While strategic renewal includes “the process, content, and outcome of refreshment or replacement of attributes of an organization that have the potential to substantially affect its long-term prospect” (Agarwal& Helfat, 2009:282), these authors also suggest strategic renewal may also include innovation, market entry and investment. The research question we are investigating is: how do firms that are seeking to improve their business respond to a design-led innovation program.

RESEARCH DESIGN AND METHODS

A longitudinal case study approach (Eisenhardt, 1989) using an action research framework was used to capture the responses to design led innovation methods and processes entrepreneurial initiatives and activities introduced in two small and medium enterprises in the mining sector and domestic products respectively. Results and findings were generated through eleven month embedded action research projects within distinct Australian manufacturing small to medium enterprises (SMEs).

Action research combines exploring new challenges in existing settings with change and learning (Dick, 2002). The researchers worked as catalysts in order to explore, facilitate and demonstrate the uptake of design-led innovation processes. The iterative, cyclical action research action learning process builds on the natural process of planning, acting and critically reflecting on the results of the action, bridging the gap between practice and theory (Dick, 2002). In the case of this research, the action research methodology frames the facilitation and implementation of a design led innovation process within each company encouraging reflection on the challenges and outcomes.

The action research program operates over a twelve-month period with the focus of this program being the ‘embedded’ nature of an innovation catalyst’, placed in a firm to work on a specific pilot project within the business with the challenge of identifying ways to improve business prospects. The program focuses on embedding tools and processes within an organisation and matching this with the design leadership qualities to enable companies to create breakthrough innovation and achieve sustained growth. The program also set out to provide a mechanism for researchers to apply and gain knowledge of this approach through a yearlong collaborative journey with their peers.

The objectives of the action research program were to explore the value of design led innovation business practices, to pilot the adoption and of a design led innovation approach within a business through a specific project, and to collectively contribute to the development of a learning community, to share common challenges and strategies to overcome the barriers to adoption of design led innovation within Australian businesses. Each week the catalysts spent 3-4 days in the firm and 1-2 days in the design led innovation lab at the university. The design led innovation lab provides a space for firms to workshop ideas and projects collectively, host international expert guest speakers, test new tools, share leanings and explore new knowledge in theory through to industry application.

Nine higher degree Research Masters and PhD students were engaged with nine companies across a variety of sizes and sectors to explore new possibilities for each business over a twelve month period. Specifically the researchers explored the potential of a long-term design intervention approach. Companies ranged in size from multinationals to small to medium sized enterprises (SMEs). In this paper, the findings from three longitudinal research engagements within participating companies as they explored design led innovation processes to find new ways to renew their businesses are presented

Data Collection and Analysis

Data collection methods include semi-structured interviews with employees, and an ongoing reflective journal. Interviews were conducted with employees at two points throughout the research engagement: after three months and again after nine months. For example, in Company B, the first round of semi-structured interviews involved 14 participants from various departments within the company, while the second round of interviews involved eight participants who were more heavily involved with the work of the catalyst. The discussions conducted in these interview rounds were focused on identifying changes in perceptions of design and design led innovation by reflecting on the range of activities and interventions facilitated by the catalyst. Thematic analysis (Miles & Huberman, 1999) was conducted on the combined data sets in order to identify the nature of responses and change processes in each firm and to compare changes over time.

The paper presents the findings from case studies of three SMEs forming a useful demonstration of the successful implementation of design led practices by embedded catalysts. Detailed data collection and validation processes through testing out with staff on a regular basis increased the veracity of the findings and the value of this approach to the SMEs.

Each of these manufacturing companies has existed for more than twenty-five years. Faced with changing external markets and market competition managers in these companies were aware that their past business success may not be sufficient in the face of growing inputs from China and Asia and were therefore seeking to refresh and improve their chances of survival as well as refocus with new operational and strategic directions for growth. These companies engaged in the Researcher in Business Program inviting the researcher to work with people in their firm to generate new insights about the firm and to assist them with strategic and operational directions. To maintain anonymity the companies were named A, B and C.

Company A is a small second-generation family business established 26 years ago. The firm with less than ten staff makes a specialised lighting product, as well as assembles parts and sell their products through retailers and well as direct to customers in local markets. This company engaged in the funded business program, seeking assistance with developing a business plan for growth. With interventions such as customer exploration and mapping, collaboration on strategic firm development, improved internal communication processes and stronger customer focus. Specific outcomes included a clearer articulation of the company's vision, improved understanding of firm's value proposition, more inclusive management; and new organization structure with clarity around two distinct business models.

Company B a medium sized firm established 56 years ago, now has 110 staff with multiple offices nationally makes products for retail trade. This company engaged with the funded business program seeking assistance with developing a sustainable business model, and directions and producing a strategic vision for their company. The research engagement began with a focus on a project with a technical problem that had important implications for new product development. Working with this problem provided the initial opportunity to demonstrate new methods around gaining a clearer view of the importance of knowing who

customers are, exploring and gaining deep customer insights and what customers are seeking and applying insights from customers and stakeholders in the business, and building better communication and involvement across the ‘silos’ in the firm.

Data about Company B’s customers, stakeholders were gathered through semi-structured interviews with a cross-section of 14 firm employees in the research and development, administration, manufacturing at two time intervals, three months and nine months of duration of research project. Workshops and Focus Groups were used to introduce new ideas and frameworks such as Customer Mapping, the Business Model Canvas, Value Proposition Canvas and Golden Circles. The researcher maintained a reflective journal to record findings from through participant observation, incidental comments as they arose and activities and interventions as a basis for later reflection.

Outcomes included increased focus on current and future customers, extension of application of design principles beyond product to operational processes strategy; creation of new position of Marketing Manager, better R & D management based on customer’s needs as well as technological solutions, changed organization structure and improved financial viability of the firm with a broader customer base. A new appreciation for the indirect value outcomes of design were developed, as shown in the following quote regarding the new perspective of indirect design outcomes at the end of the research engagement:

“It [design] is the next step, about creating value that is not based on product or service, it’s based on maybe a better process of dealing with us, or giving them the edge in terms of product, promotion, or channel to market”
(Company B)

Company C, established 24 years ago by the current Managing Director, is a medium sized company that employs 170 staff, with headquarters in Australia and international sales offices. The company develops product and technology services, in a Business to Business context. This company sought assistance through the funded business Program to innovate for growth in a dynamic environment.

Data collection for Company C included semi-structured interview initially with 15 employees and later 20 employees, focus groups, thematic analysis and presentation of research to the company. Activities and Interventions by the catalyst included capturing deep customer and stakeholder insights, applying these insights in operational and strategic dimensions of business and disseminating insights within company. Outcomes from these interventions included building awareness and the importance of customer needs into multiple aspects of business; Top Management team focus on Customer inspired Design, celebrating small wins, and application of knowledge of gathering customer insights and incorporating into Top Management Team (TMT) process.

Company C had been founded by manufacturing a disruptive innovation for the mining industry and the CEO and Top Management Team were seeking the next disruptive idea to take this company to new horizons.

“Company C has now passed a board-level directive which supports the company in taking a customer- inspired focus”
(Company C)

“Customer Inspired Design, it to me, to me that says something, slightly less academic and slightly more real. For me it’s more understandable and something that I feel bit more like it’s something I want to chase”.*
(Company C)

Company C now employs two ex-customers/stakeholders to bring customer knowledge into the company.

Those key players who are working on the tomorrow of the company, innovation is much more about business models”. (Company C)

“Embedding the voice of our customer into Company C through the company periodic gatherings of staff to discuss initiatives, progress and news; war stories from mine sites... hearing about our customers through our subsidiaries... not just stories of our own manufacturing successes...but stories of our customers success with our products and services”. (Company C)

A summary of case information is presented in Table 1.

Insert Table 1 here

Following transcription of all interviews, data were analysed separately for each case, using open coding of interviews, followed by Axial coding to identify themes. Though embedded in very different enterprises, the researchers carried out similar core projects based on the Design Led Innovation process, including running focus groups and workshops.

Results from the semi-structured interviews indicate that the researchers were seen as catalysts to help companies explore new ways of working, thinking and developing new solutions and also knowledge distributors, spreading these approaches throughout the company.. The researchers worked with the company in small groups to demonstrate an approach that would be piloted and then dispersed productively amongst all employees of the firm. A deeper understanding of their customers was a large part of the value offering of the catalysts. The researchers were perceived as creating value in relation to the firm, the industry and academia and were respectively described as knowledge disseminators, change catalysts and organisational culture reformists. For example, Company C linked the introduction of a design led approach to developing a new customer focused business model and to the change organisational culture from an engineering culture to a customer focused innovation culture.

An additional value of the program was the ability to bring a unique resource to the firm by bridging the gap between industry and academia, allowing for more unbiased critical thinking to mature, whilst aiming to understand and translate the human complexity of the business. This was especially vital through the connecting and motivating separate departments of the organisation to work together to solve common and complex problems. Specialised offerings in empathising with their customers and understanding the future and latent needs of the prospective customer were particularly valued. Furthermore providing companies with holistic innovation tools, processes, and strategies enabled them to better connect with their customers and the use of deep customer insight processes was a valued component of their offering.

DISCUSSION AND CONCLUSIONS

As previously mentioned, many enterprises often have well-developed routines that have shaped the processes for their past success, but in fast changing environments these practices may also be the cause of rigidities that inhibit innovation (Leonard-Barton, 1992). Research has found that performance among small firms in hostile environments was positively related to an organic structure, an entrepreneurial strategic posture, a competitive profile characterized by a long-term orientation, and a concern for predicting industry trends (Covin & Slevin, 1989).

While the benefits of design management programs where design consultants have used processes and methods to assist firms to capture deep customer insights, restructure the business and increase the firm's competitiveness have previously been noted (Better by Design 2010) there is scant research that investigates the use of designers undertaking action research projects as innovation catalysts embedded in small and medium enterprises in the manufacturing sector.

Our findings show that SMEs who embraced a design led innovation responded to the embedded catalysts using design led innovation processes and practices to explore and learn about their customers, to capture these insights and reconfigure their capabilities to deliver new more strategic directions and increased competitiveness. The findings from this study will contribute to a deeper and broader understanding of the implementation of design methods and process as contributions to strategic renewal of SMEs.

Future research will explore the strategies that small and medium enterprises use to learn new ways of understanding the value proposition of their company and to reposition themselves for success in competitive market places. In addition designers with their holistic approach to business and their empathic approach to the needs and desires of customers are increasingly working as innovation catalysts and change agents at the strategic level with existing companies to shape and create renewed strategic directions.

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Table 1: Summary of Case Studies of three Manufacturing Companies

	<i>Company A</i>	<i>Company B</i>	<i>Company C</i>
Age and Size Office/s	26 years; <10 staff; 1 location	56 years; 110 staff Multiple locations nationally	24 years; 170 staff One Australian HQ with international offices
Founder	Family Business –second generation	Founder no longer involved	Family Business established by Managing Director
Company Focus	Specialised Product, Supplier to Retail and Customers	Product focused, and Supplier for Retail Trade	Product and technology services, Business to Business
Company Engagement Purpose	Seeking assistance with business plan for growth	Seeking assistance with sustainable business model and directions	Seeking assistance to innovate for growth in dynamic environment
Data Collection in 12 month action research project – multiple sources	Participant Observation Interviews with 8 staff, cross- section of firm at two time intervals Workshops and Focus Groups Reflective Journal	Participant Observation Interviews with 14 staff cross- section of firm at two time intervals, Workshops and Focus Groups Reflective Journal	Participant Observation Interviews with 20 staff, cross-section of firm at two time intervals Workshops and Focus Groups Reflective Journal
Activities and Interventions: Customer mapping Business Model Canvas Value Propositions	Customer mapping, Collaboration on strategic firm development, internal communication processes and customer focus	Using project to sensitise firm to design led innovation; Gaining clearer view of importance of knowing who customers are and what they are seeking; Breaking down silos in firm	Capturing deep insights from customers and applying these insights in operational and strategic dimensions of business. Disseminating insights within company.
Organization Changes: Shared Values, Strategy, Structure, Systems, Staffing, Style, Skills,	Clearer company vision Improved Understanding of Value proposition More inclusive management; New organization Structure with two distinct business models	Increased focus on Customers, Extend application of design principles beyond product to strategy; New Marketing Manager, better R & D management; Improved financial viability of firm New organization Structure	Build awareness of Customer needs into multiple aspects of business; Top Management team (TMT) focus on Customer inspired Design; Celebrate small wins; Knowledge of gathering customer insights, incorporating into TMT process; Seeking next disruptive idea; creating cultural shift

Explaining Rapid Growth in SMEs

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Explaining Rapid Growth In Smes

Abstract

Employing a sample of 336 small-to-medium enterprises, we examine the effects of entrepreneurial orientation, innovation and network competence on firm growth. This research explains the occurrence of high-growth and gazelle firms by building on the resource- and knowledge-based views of the firm as well as dynamic capabilities, core competencies, and strategic orientation theories. Our results indicate that high-growth firms are more likely to demonstrate entrepreneurial and innovation orientations as well as the ability to leverage their business networks for growth.

The Influences of Entrepreneurial Competency Clusters on Entrepreneurial Intent

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The Influences Of Entrepreneurial Competency Clusters On Entrepreneurial Intent

ABSTRACT

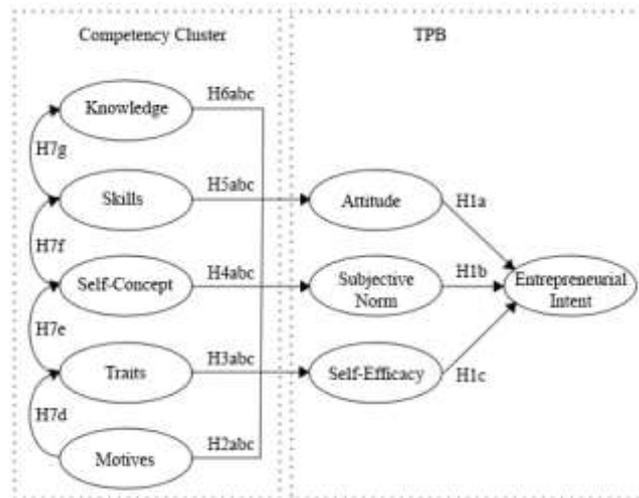
This study uses the Theory of Planned Behavior to build an extended framework which describes the relation between five overarching, hierarchically aligned competency clusters and entrepreneurial intentions (EIs). This new model is then tested on a sample of 105 students. Structural equation modeling and mediation analyses are used to examine the importance of each competency cluster for the development of EIs. The results indicate that each competency cluster significantly contributes to the formation of EIs and that effects of some clusters are mediated through other higher-level clusters. Overall, the findings suggest that the new model provides a better understanding of the development of EIs.

Introduction

The need of entrepreneurial activity for economic development has always been essential in the prosperity of developed economies, as entrepreneurs are often the ones who have innovative ideas, initiate economic activities, and create new jobs. In order to enhance economic behavior, researchers across the world have attempted to answer the question why some individuals become entrepreneurs but others do not. In line with Ajzen's (1991) well-established theory of planned behavior (TPB), entrepreneurial behavior is best predicted by entrepreneurial intentions. Entrepreneurial intentions are a person's conscious state of mind, which directs all personal attention toward creating a new venture (Bird, 1988). The TPB suggests that intentions are shaped by three antecedents, i.e., attitudes, subjective norms, and perceived behavioral control or self-efficacy. In the past decades, researchers aimed to identify further key drivers behind these three antecedents and therefore examined numerous entrepreneurial competencies. Entrepreneurial competencies are often defined as an individual's characteristics, which account for superior or more effective performance (Spencer and Spencer, 1993). Some competencies examined extensively are e.g. need for achievement, risk-taking propensity, creativity and opportunity recognition, drive and energy, and entrepreneurial experience and education. However, almost no attention has been paid to the relative importance and the interrelatedness of the particular competencies for the evolution of entrepreneurial intentions. The reason for this may be that competency is often regarded as a 'fuzzy' concept (Delamare Le Deist and Winterton, 2005) and that no predominant framework in this field has yet evolved. This paper makes a first attempt to create a more integrated but parsimonious framework. Instead of relating single competencies directly to the three intentional antecedents, it structures them into five general competency clusters – motives, traits, self-concept, skills, and knowledge (Spencer and Spencer, 1993) and pays attention to their relation. The corresponding model, termed the competency intent model (CIM), is depicted in Figure 1.

The findings of this first exploratory study provide a starting point for a better understanding of the relative importance of each competency cluster and the way in which they influence student's entrepreneurial intentions. The following sections of this paper are organized as follows. Section two derives the competency intent model by giving a review of the relevant literature on entrepreneurial intentions and entrepreneurial competencies. On this basis several hypotheses are suggested. The third section shortly presents the methodology of this exploratory research. Section four evaluates the measurement models as well as the structural model and discusses the findings of the hypotheses testing. To conclude, section five summarizes the findings and outlines some limitations and implications of this study.

Figure 1. The Competency Intent Model (CIM).



Theoretical Background and Derivation of the Competency Intent Model Entrepreneurial Intentions

Researchers in entrepreneurship have set forth the notion that the process of venture creation, also referred to as nascent entrepreneurship, is a conscious process which involves a considerable amount of planning (Gartner, 1989; Bird, 1988). Thus, it seems plausible to analyze the causes of such a behavioral decision process. The large number of early studies on entrepreneurship models has primarily emphasized the direct effects of demographics, traits, or attitudes on entrepreneurial behavior. Although research in this field appears saturated, with further attempts in this direction unlikely to produce new information (Gartner 1989; Krueger et al. 2000), the key problem with these models remains their relatively low predictive power. Therefore, the use of robust theory-driven intention models promises to offer a better approach towards entrepreneurial behavior, because they channel the influence of traits, attitudes, and the like towards behavior.

Ajzen's (1991) theory of planned behavior (TPB) is an intention model that has increasingly received attention from entrepreneurship researchers. This theory assumes that behavior in its simplest form is best predicted by intentions. Intentions, in turn, are triggered by attitudes toward the specific behavior, subjective norms, and perceived behavioral control. Exogenous factors, such as traits, demographics, or economic variables, rarely affect intentions or behaviors directly. They rather change attitudes, subjective norms, or perceived behavioral control and thereby indirectly affect intentions (Krueger and Carsrud, 1993). Thus, additional variables such as motives, traits, and knowledge may also stimulate the development of entrepreneurial intentions, but only indirectly. This makes the use of the TPB perfectly suitable to examine the effect of entrepreneurial competencies on intentions. Within the context of entrepreneurship, the constructs of the TPB are defined as follows:

Entrepreneurial intention is the individual's willingness to engage in entrepreneurial behavior and to create a new venture (Bird, 1988). There are three independent determinants of entrepreneurial intentions. First, *attitude towards entrepreneurship* describes a person's favorable or unfavorable evaluation of self-employment (Ajzen, 1991) and is, therefore, an important aspect that affects entrepreneurial intentions. Second, *subjective norms* reflect what important others in the respondent's life think about them becoming self-employed and also reflects the respondent's motivation to comply with these opinions (Krueger et al., 2000). And third, *perceived behavioral control* refers to the perceived ability to execute specific tasks, i.e., to become an entrepreneur. Perceived behavioral control was found to be closely

related to Bandura's (1977) construct of *self-efficacy*, i.e., the perceived level of difficulty of performing a certain behavior.

There is a large volume of published studies in entrepreneurship that confirm the TPB's postulated relationships between attitudes, subjective norms, perceived behavioral control, and entrepreneurial intent (Krueger and Carsrud, 1993; Kolvereid, 1996; Krueger et al., 2000; Liñán, 2004 and 2008; Fayolle et al., 2006). In addition, Krueger and Carsrud (1993) suggested that the self-efficacy construct is an extremely powerful predictor for intentions and should be used in entrepreneurial research. Following this advice, a number of researchers replaced perceived behavioral control by self-efficacy and conclusively showed that the latter has a strong positive effect on entrepreneurial intent (Davidson, 1995; Chen et al., 1998; Krueger et al., 2000, Kristiansen and Indarti, 2004; Zhao et al., 2005). Therefore, the first set of hypotheses is the following:

Hypothesis 1: Attitude (H1a), subjective norms (H1b), and self-efficacy (H1c) positively influence entrepreneurial intentions.

Although the TPB offers a general approach to explain the formation of intentions and behaviors, its sufficiency can be challenged (Perguini and Bagozzi, 2001) and several authors call for more research that identifies further distal antecedents of entrepreneurial intentions (Armitage and Conner, 2001; Schlaegel and Koenig, 2014). Following this request, this paper there focuses on entrepreneurial competencies as distal variables and examines their influential impact on entrepreneurial intentions.

Entrepreneurial Competencies

Research on competencies has a long tradition. In 1959, the term 'competence' was first defined as those personal characteristics that account for superior performance and above average motivation. Several years later, Boyatzis (1982) and Spencer and Spencer (1993) specified this definition and suggest that competencies are all "motives, traits, self-concepts, attitudes or values, content knowledge, or cognitive or behavioral skills – any individual characteristic ... that can be shown to differentiate significantly between superior and average performers, or between effective and ineffective performers" (Spencer and Spencer, 1993: 4). Some of these competencies may or may not be conscious attributes of the individual; some are innate while others are acquired through learning and training.

In the field of entrepreneurship, Bird (1995) was among the first to investigate entrepreneurial competencies and extends the definition set forth by Spencer and Spencer (1993). She describes competencies "as underlying characteristics such as generic and specific knowledge, motives, traits, self-images, social roles, and skills which result in venture birth, survival, and/or growth" (Bird, 1995: 51). Significant competencies identified are, for example, risk-taking propensity (Koh, 1996; Lüthje and Franke, 2003; Caliendo et al., 2014), tolerance for ambiguity (Koh, 1996), leadership and communication skills, drive and energy, perseverance, need for achievement (McClelland, 1961), and need for autonomy (Davidsson, 1995).

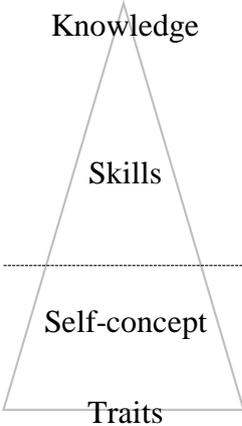
Clustering Competencies. Despite the fact that researchers have provided several frameworks for explaining competencies within entrepreneurship, the concept itself still remains 'fuzzy' (Delamare Le Deist and Winterton, 2005; Lans et al., 2008). This is caused not only by its quite diverse components, i.e., knowledge, skills, traits, and motives, but also by the different disciplines it crosses, such as psychology, organizational behavior, and educational science (Lans et al. 2008). This had led authors to neglect a more holistic

approach to the investigation of the relationship between competencies and entrepreneurial intent and, instead, to analyze the direct effects of single competencies. Even though their research produced statistically significant relationships, the key problem of relatively small effect sizes remains. Rather than being the result of studying the wrong traits or competencies, the small quantitative effects may be due to the neglect of indirect effects that are mediated through other factors, for example, self-efficacy (Locke, 2001; Baum and Locke, 2004).

Therefore, it is important to examine competencies in a more structured way, e.g., by forming higher order constructs/competency clusters as proposed by Boyatzis et al. (1999), who point out that clustering competencies is important for two main reasons. On the one hand, competencies within a cluster may be related in different ways. They may *complement* each other in a functional behavior, i.e., if a person demonstrates several of these competencies, their overall effectiveness would increase. Competencies within a cluster may also *compensate* each other, i.e., the use of different competencies may result in the same outcomes. Additionally, competencies may be *antagonistic*, i.e., the frequent use of one competency will hinder the use of another. On the other hand, clusters should be seen as parts of a whole and should be related in some way, instead of simply being a mere listing of competencies. Analogous to competencies within clusters, clusters might *complement* each other, i.e., the mutual demonstration of competency clusters typically leads to more effectiveness. Likewise, they may *compensate* each other, i.e., the more intensive use of a competency cluster makes up for the deficit of another. Furthermore, they may have a developmental relationship, i.e., one cluster is needed for the sustainable demonstration and use of another cluster.

Five Clusters of Entrepreneurial Competencies. Spencer and Spencer (1993) were among the first to generally organize competencies in higher-order clusters. In their analysis of approximately 650 different jobs they developed the iceberg model of competencies, which is presented in Table 1.

Table 1. The iceberg model of competencies, adapted from Spencer and Spencer (1993).

Competency Clusters	Description	Classification	Degree of difficulty in execution
 Knowledge Skills Self-concept Traits Motives	Information a person has in a particular field	Threshold Competencies	Easy to observe and train
	The ability to perform a certain physical or mental task		
	A person's sense of identity and worth	Differentiating/Success Competencies	Hard to observe and train
	A general disposition to behave in a certain way		
	Repeated thoughts that drive behavior		

This model illustrates the observable and unobservable elements of competencies and their hierarchical influence. The top of the iceberg refers to knowledge and skills - competencies that are easily observable in a specific task and developed through education and training. Often, they are the minimum characteristics required for an effective performance and are, therefore, described as threshold competencies. The competencies at the lower level of the iceberg are less visible but have a substantial impact on the surface competencies and provide a strong inner drive to use them. These lower level competencies include motives, traits, and self-concept and are more difficult to develop. Often, these are the competencies that distinguish superior from average performers and are, therefore, also referred to as differentiating or success competencies. Previous research claims that the possession of threshold competencies is sufficient for starting a business, whereas success competencies are necessary for a ventures survival and growth (Bird, 1995). However, as threshold competencies are influenced by success competencies (Spencer and Spencer, 1993), it is essential to examine the role of the latter in the start-up process and on entrepreneurial intentions respectively. Therefore, this paper combines the Theory of Planned Behavior and the iceberg model of competencies in the new competency intent model (CIM), which is illustrated in Figure 1, and makes a first attempt to empirically test the hypothesized relationships.

Cluster 1 – Motive Competencies. The first higher-order construct in the CIM is motives. Following the definition set forth by McClelland (1985), motives are a person's strong recurrent wish for a goal or situation and, accordingly, drive, select, and direct behavior. Ryan and Deci (2000) argue that motivation also relates to intention. Four strong internally driven motives for starting a business identified in the literature are need for achievement, need for power, need for autonomy, and need for affiliation. Therefore, these four motives could be indirectly associated with entrepreneurial intent. Therefore, the second set of hypotheses reflects these relationships:

Hypothesis 2: Entrepreneurial motives have a positive impact on attitude (H2a), subjective norms (H2b), and self-efficacy (H2c).

Need for achievement (nAch) refers to a person's unconscious drive to a better performance in a specific task. People with such a strong nAch display initiative, take responsibilities, set high demanding but realistic and attainable goals for themselves and measure their progress toward these goals (McClelland et al., 1953; Timmons, 1978). Previous empirical studies have found out high scores of nAch distinguish entrepreneurs from non-entrepreneurs (McClelland, 1961; Cromie and O'Donaghue, 1992; Koh, 1996, Cromie, 2000) and successful from less successful entrepreneurs (McClelland, 1965; Cromie, 1987; Koh, 1996). Also, nAch was found to significantly predict entrepreneurial intent (Kristiansen and Indarti, 2004). *Need for power (nPow)* describes a person's unconscious will to have impact on others. People with a high nPow prefer taking leadership positions or other occupations in which they can impose power on others (McClelland, 1975). High levels of nPow are typical for entrepreneurs and this form of personal wish to exercise power over others may also be a reason for starting a business (Schmitt-Rodermund, 2004). *Need for autonomy (nAut)* describes a person's drive for independent decision-making and problem solving (Oosterbeek et al., 2010). It has also been shown that entrepreneurs and potential entrepreneurs have a higher nAut, as compared to others (Sexton and Bowman, 1985; Cromie and O'Donaghue, 1992; Cromie, 2000). Likewise, nAut has been identified as a central motive for people to start their own business (Cromie, 1987). *Need for affiliation (nAff)* is the unconscious ambition to establish or maintain warm, close relationships (McClelland, 1961).

People with a high nAff prefer collaborative activities and occupations in which they can work closely together with others. They have also a tendency to conform to the wishes and norms of people important to them. Thus, high nAff is expected to be a strong motive, if people relevant to the nascent entrepreneur want him or her to become self-employed; otherwise, it is not. In general, low nAff was found to be typical for entrepreneurs (McClelland, 1975; Zhao and Seibert, 2006).

Cluster 2 – Trait Competencies. The second higher-order construct in the CIM is a person's traits. These are general tendencies to behave in a certain way and are relatively stable over time. Whilst Krueger et al. (2000) argue that personality traits are less suitable predictors for entrepreneurial behavior because of their low exploratory power and predictive validity, research on entrepreneurial competencies has identified a large number of distinct traits that are significantly related to entrepreneurial success and/or entrepreneurial intent. In this sense, three additional hypotheses are postulated:

Hypothesis 3: Entrepreneurial traits have a positive impact on attitude (H3a), subjective norms (H3b), and self-efficacy (H3c).

Prominent trait competencies in the literature are risk-taking propensity, tolerance for ambiguity, drive and energy, perseverance, concern for high quality, and flexibility. McClelland (1961) defines *risk-taking propensity* not only as decision-making under uncertainty but also as the willingness to bear losses in situations, which can be influenced to some extent by one's own actions, e.g., starting a business. Earlier research shows that entrepreneurs usually have a higher risk-taking propensity than others (Sexton and Bowman, 1985; Cromie and O'Donoghue, 1992) and that people with a higher risk-taking propensity have a higher entrepreneurial intent (Koh, 1996; Zhao et al., 2005). *Tolerance for ambiguity* is closely related to risk-taking propensity and predicts the way in which the entrepreneur perceives and approaches ambiguous situations. Individuals who consider ambiguity as undesirable often experience higher levels of stress and are prone to make quick decisions and actions based on insufficient information. However, exploiting business opportunities is, by nature, ambiguous and several studies have shown that a high tolerance for ambiguity is a unique trait of entrepreneurs (Sexton and Bowman, 1985; Koh, 1996). *Drive and energy* refers to a person's capacity to work for long hours and to see something through. This capacity has been frequently observed in successful entrepreneurs (Timmons, 1978; Chandler and Jansen, 1992). Likewise, *perseverance* is a trait that involves commitment to hard work and the performance of repeated or different actions that are necessary to overcome obstacles during the start-up process (McClelland, 1987; Baum and Locke, 2004). *Concern for high quality* is also a frequently found characteristic of successful entrepreneurs (McClelland, 1987). People with a high concern for quality believe in excellence and, therefore, pay attention to details and aim to produce results of higher or top quality. *Flexibility* allows people to adapt and react to the constantly changing environment more easily (Oosterbeek et al., 2008). Being flexible is an advantage during the venture creation process, as entrepreneurs must adapt their course of action when they enter new markets, which they do not completely know in advance.

Cluster 3 – Self-Concept Competencies. The third higher-order construct is self-concept. It describes a person's sense of identity and consists of knowledge and evaluative elements. Knowledge elements include beliefs about physical characteristics, traits, roles, values, and goals; evaluative elements often refer to one's self-evaluation (i.e., the attitude towards oneself) and primarily consist of self-esteem (Campbell et al., 1996). As the

knowledge component of self-concept is mainly inherent in motives and traits, this paper will only focus on the evaluative component, especially on self-esteem.

Self-Esteem can be described as a two-dimensional construct, consisting of self-competence and self-linking. Self-competence is very closely related to Bandura's (1977) concept of self-efficacy and describes a person's evaluation of own capabilities required to bring about a desired outcome (Tafarodi and Swann, 2001). Therefore, self-competence is also linked to Ajzen's (1991) construct of perceived behavioral control. Self-linking describes the evaluation of oneself as a person, good or bad, worth living and with social significance. For many researchers, self-linking is *the* definition of self-esteem, and self-competence may contribute to it. In the present study, the term *self-esteem* will be used to refer to self-linking.

People with high self-esteem hold positive beliefs about themselves. They are less influenced by others and will more likely regard stressful situations, such as starting a new venture, as a favorable challenge. In contrast, people with low self-esteem hold negative beliefs about themselves. They are characterized by high levels of insecurity; they often feel emotionally exhausted and depressed and accomplish less (Campbell et al., 1996; Tafarodi and Swann, 2001). Accordingly, they will quickly refrain from the idea of starting an own business. Therefore, the fourth set of hypotheses is the following:

Hypothesis 4: Self-concept has a positive impact on attitude (H4a), subjective norms (H4b), and self-efficacy (H4c).

Cluster 4 – Skill Competencies. The fourth higher-order construct, i.e., skills, describes a person's general ability to perform certain physical or mental tasks, which can be learned and improved through education and training. The specific skills considered in this study, i.e. creativity and opportunity recognition, communication, persuasion, and networking, have been taken from the literature and more recent evidence has already demonstrated that entrepreneurial skills are significant predictors of the three antecedents of entrepreneurial intention (Liñán, 2008). Therefore, the fifth set of hypotheses includes the following relationships:

Hypothesis 5: Entrepreneurial skills have a positive impact on attitude (H5a), subjective norms (H5b), and self-efficacy (H5c).

Entrepreneurs “develop new ideas, spot market opportunities, or combine existing ideas and resources in different ways to create additional value” (Cromie, 2000, p.20). Subsequently, *creativity and opportunity recognition* have been identified as the core of entrepreneurship (Timmons et al., 1987). It refers to a person's ability to think in non-conventional ways, to take on a different perspective, to identify new possibilities, and to turn problems into opportunities. Further, *communication* and *persuasion* skills are important for entrepreneurs during the start-up process in order to clearly convey their vision to others involved in the start-up and to elicit their support (Locke, 2001; Baum and Locke, 2004). In business, entrepreneurs have to deal with many different people. Therefore, *networking* ability is essential for developing and keeping up key relationships with important stakeholders, e.g., clients or suppliers. Being in contact with others is important for entrepreneurs, because they also get access to important information and other resources, which enable them to advance with their start-up (Ahmad et al., 2010).

Cluster 5 – Knowledge Competencies. The fifth and last higher-order construct is knowledge. Generally, knowledge refers to a person's specific information about a certain topic. A person has entrepreneurial knowledge if he or she knows what to do when he or she has a good business idea and wants to realize it (Davidsson, 1995). In his empirical study,

Liñán (2004) investigated the effects of knowledge on entrepreneurial intentions. He emphasizes its importance and special role. Knowledge not only has a strong direct effect on intentions, but also an indirect effect through the antecedents. In this sense, three further hypotheses are derived:

Hypothesis 6: Entrepreneurial knowledge has a positive impact on attitude (H6a), subjective norms (H6b), and self-efficacy (H6c).

In order to enhance entrepreneurial knowledge, a growing body of literature has been highlighting the relevance of education and experience (Liñán and Chen, 2006, 2009). Especially *entrepreneurship education* has been receiving much attention from researchers, policy makers, and educators. The primary goals of entrepreneurship education programs before the start-up process are to increase entrepreneurial awareness and to equip potential entrepreneurs with the relevant know-how and skills to successfully start a venture (Liñán, 2004). Subsequently, various studies have analyzed the relation between entrepreneurship education and intention. Some report that education has no significant or even a negative influence on intent (Chen et al., 1998; Kristiansen and Indarti, 2004; Oosterbeek et al., 2008; Oosterbeek et al., 2010), whereas others have delivered strong empirical support for an indirect effect of education through attitude, subjective norms, and/or perceived behavioral control (Liñán, 2004; Zhao et al., 2005; Fayolle et al., 2006).

Similarly, *entrepreneurial experience* has been widely investigated and may be the result from one's own prior experience or vicarious experience. Own *prior experience* as an entrepreneur or work experience in small businesses provides important knowledge and enables a person to evaluate new business opportunities more easily. Entrepreneurial experience has been identified as being a significant direct predictor of entrepreneurial intentions (Delmar and Davidsson, 2000; Zhao et al., 2005) or indirect predictor through the antecedents (Kolvereid, 1996; Liñán and Chen, 2009). *Vicarious experience* refers to the observational learning from others, especially entrepreneurial role models, who may not only convey their knowledge but may also constitute a positive or negative example of entrepreneurship. A number of studies have found out that vicarious experiences from role models can indirectly affect an individual's intention to become self-employed through attitudes, subjective norms, and/or perceived behavioral control (Krueger, 1993; Boyd and Vozikis, 1994; Davidsson, 1995; Kolvereid, 1996a; Liñán and Chen, 2009).

Finally, as hypothesized by the iceberg model, there is a direct influence from motives to traits, from traits to self-concept, from self-concept to skills, and from skills to knowledge. Therefore, the last set of hypotheses is the following:

Hypothesis 7: Motives have a positive impact on traits (H7d); traits have a positive impact on self-concept (H7e); self-concept has positive impact on skills (H7f); skills have a positive impact on knowledge (H7g).

Method

Sample

The purpose of this study is to examine a rare entrepreneurial phenomenon, entrepreneurial intent, before it occurs, i.e. before a person actually starts and runs a business. Following the suggestions of Krueger et al. (2000) and Delmar and Davidsson (2000), selecting only successful entrepreneurs or current entrepreneurs causes different biases that distort data unpredictably. Thus, a student sample appeared appropriate for this study. Unique data was obtained from bachelor and master business students at a German university during the first two weeks of the academic winter semester 2013/14. Approximately 600 students

were asked to participate in this research on a voluntary basis. Each student received a one-time access code to the self-administered online questionnaire with all forced answers (to assure that there is no missing data). In total, 106 questionnaires were completed (response rate = 17.5%). One answer had to be excluded from further analysis (straight liner), resulting in 105 usable questionnaires. Of these students, 56 (53.3%) were female. The majority aged between 18 and 23 (80%). In total, 68 (64.8%) students were pursuing their bachelor degrees.

Measures

The online survey administered combined the measurement scales of the four variables from the TPB (entrepreneurial intent, attitude towards entrepreneurship, subjective norms, and self-efficacy) and sixteen different competencies (nAut, nAch, nAff, nPow, perseverance, drive and energy, risk-taking propensity, tolerance of ambiguity, concern for quality, self-esteem, creativity, communication, persuasion, networking, education, and experience). The questionnaire consisted of 61 items⁶⁵ (including demographic information) derived and adapted from literature research. Most item responses were measured on a symmetric 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5) as this scale fulfills the requirement of equidistance and can therefore approximate an interval-level measurement (Hair et al., 2014). Thus, the corresponding variables can be used for further SEM analysis. The items measuring the same construct were separated in the survey to reduce common method bias (Podsakoff et al., 2003). Answers to every question were required to avoid missing values in the data set.

Results

A structural equation model (SEM) including all hypothesized relationships between students' entrepreneurial intentions and their entrepreneurial competencies as proposed by the CIM was set up. All statistical analyses were conducted using SmartPLS 2.0 (Ringle, Wende, and Will, 2005) and SPSS22 software package.

Measurement Model Validation

Before testing the hypotheses proposed in this paper, it is important to validate the measurement models by following the recommendations of Hair et al. (2014). The reflective measurement models (i.e., the distinct competencies measuring the according competency cluster) included in this SEM met all necessary requirements, i.e., internal consistency (Composite Reliability > 0.60), convergent validity (Average Variance Extracted > 0.50), indicator reliability (Loadings > 0.708), and discriminant validity (Fornell-Larcker criterion). The formative measurement models (i.e., the five competency clusters and the four factors included in the TPB) are assessed using 5,000 bootstrap subsamples. There were no multicollinearity issues (Variance Inflation Factors < 5). Only one cluster-indicator (nPow) was less relevant and insignificant; and is therefore eliminated from further analysis.

Structural Model

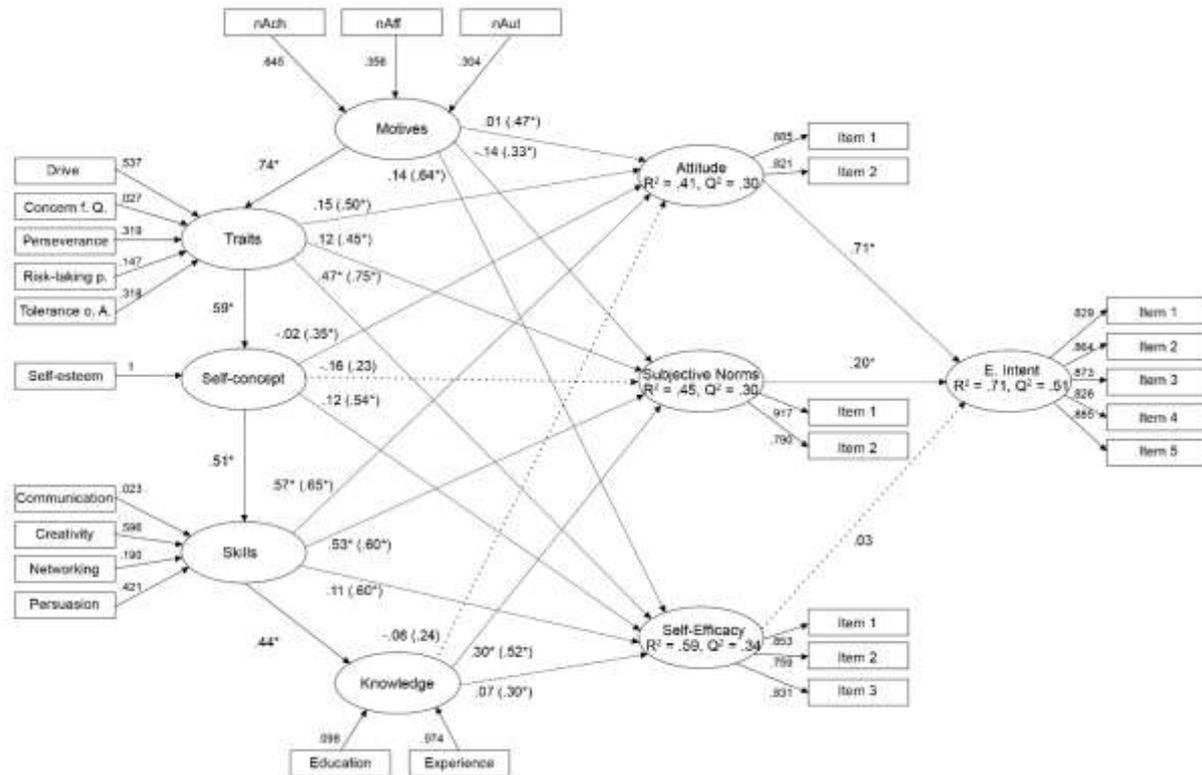
First, composite indexes for each competency cluster were constructed from the respective multiple distinct competencies in order to make the structural model more parsimonious.⁶⁶ These new cluster variables had significant correlations with entrepreneurial intent, attitude, subjective norms, and self-efficacy and there was no multicollinearity problem in the SEM. Next, the hypothesized relationships of the model and their significance

⁶⁵ the full questionnaire is available on request by the author.

⁶⁶ using the latent variable scores from SmartPLS. These latent variables have $\mu=0$ and $\sigma=1$.

are examined using partial least squares (PLS)⁶⁷ with 5,000 bootstrap subsamples. Figure 2 shows the findings of the structured equation model.

Figure 2. Findings for the competency intent model (N=105).



Note: ellipses = latent variables, boxes = composite variables, numbers on arrows from boxes to ellipses = indicator weights of formative measurement models, numbers on arrows from ellipses to boxes = indicator loadings of reflective measurement models; numbers on paths between ellipses = standardized path coefficients (β); numbers in parentheses refer to regression coefficients of bivariate regressions; dotted lines = non-significant relationships; * $p < 0.05$.

The model fits sufficiently well. A high amount of variance results for entrepreneurial intentions ($R^2 = 0.71$). Moderate levels of explained variances occur for attitude ($R^2 = 0.41$), subjective norms ($R^2 = 0.45$), and self-efficacy ($R^2 = 0.59$). The predictive relevance of each endogenous latent construct is assessed with the Stone-Geisser's Q^2 using a blindfolding procedure (Hair et al., 2014). All Q^2 values are well above zero, thus providing support for the predictive relevance of each endogenous latent construct. Next, when looking at the paths between the factors of the TPB, we see that the students' entrepreneurial intentions are significantly influenced by attitudes ($\beta = 0.71$) and subjective norms ($\beta = 0.20$), as hypothesized, but not by self-efficacy ($\beta = 0.03$). Therefore, H1a and H1b are confirmed, whereas the data did not deliver empirical support for H1c. When looking at the significant relations among the five competency clusters, we can see that motives influence traits ($\beta = 0.74$), traits influence self-concept ($\beta = 0.59$), self-concept influences skills ($\beta = 0.51$), and skills influence knowledge ($\beta = 0.44$) as predicted by H7d, H7e, H7f, and H7g, respectively.

⁶⁷ for a detailed discussion the selection criterion for CB and PLS SEM read Hair et al. (2011).

There are also strong and significant relations between the competency clusters and the three direct antecedents of intentions. Attitude is influenced by skills ($\beta = 0.57$), subjective norms are predicted by skills ($\beta = 0.53$) and knowledge ($\beta = 0.31$), and self-efficacy is directly influenced by traits ($\beta = 0.47$), Hence, H5a, H5c, H6c, and H3c respectively are confirmed.

Table 2. Summary of hypotheses test results.

Hypotheses	SEM	Bivariate	Accept/
	results	regression	Reject
	□	□	
H1a: Attitude has a positive impact on entrepreneurial intentions.	0.71*	-	Accept
H1b: Subjective norms have a positive impact on entrepreneurial intentions.	0.20*	-	Accept
H1c: Self-efficacy has a positive impact on entrepreneurial intentions.	0.03	-	Reject
H2a: Entrepreneurial motives have a positive impact on attitude.	0.01	0.47*	Accept
H2b: Entrepreneurial motives have a positive impact on subjective norms.	-0.14	0.33*	Accept
H2c: Entrepreneurial motives have a positive impact on self-efficacy.	0.14	0.64*	Accept
H3a: Entrepreneurial traits have a positive impact on attitude.	0.15	0.50*	Accept
H3b: Entrepreneurial traits have a positive impact on subjective norms.	0.12	0.45*	Accept
H3c: Entrepreneurial traits have a positive impact on self-efficacy.	0.47*	0.76*	Accept
H4a: Self-Concept has a positive impact on attitude.	-0.02	0.35*	Accept
H4b: Self-Concept has a positive impact on subjective norms.	-0.16	0.23	Reject
H4c: Self-Concept has a positive impact on self-efficacy.	0.12	0.54*	Accept
H5a: Entrepreneurial skills have a positive impact on attitude.	0.57*	0.65*	Accept
H5b: Entrepreneurial skills have a positive impact on subjective norms.	0.53*	0.60*	Accept
H5c: Entrepreneurial skills have a positive impact on self-efficacy.	0.11	0.60*	Accept
H6a: Entrepreneurial knowledge has a positive impact on attitude.	-0.06	0.24	Reject
H6b: Entrepreneurial knowledge has a positive impact on subjective norms.	0.30*	0.52*	Accept
H6c: Entrepreneurial knowledge has positive impact on self-efficacy.	0.07	0.30*	Accept
H7d: Motives have a positive impact on traits.	0.74*	-	Accept
H7e: Traits have a positive impact on self-concept.	0.59*	-	Accept
H7f: Self-concept has positive impact on skills.	0.51*	-	Accept
H7g: Skills have a positive impact on knowledge.	0.44*	-	Accept

Note: * $p < 0.05$.

Mediation Analysis

To examine whether significant direct influences of a competency cluster on attitudes, subjective norms, and self-efficacy are absorbed by the existence of a potential mediator in the model, i.e., a higher competency cluster, several mediation analyses with bootstrapping procedures and calculations of variances accounted for (VAF) were carried out following the recommendations of Hair et al. (2014). A VAF value below 0.20 indicates no mediation, a value between 0.20 and 0.80 suggests partial mediation, and a value above 0.80 implies full mediation. Bivariate analyses have shown that all competency clusters are directly related to at least two of the three direct antecedents of entrepreneurial intent. The mediator analyses revealed that various significant direct effects were absorbed by the higher level competency clusters. The significant direct effect of motives on attitudes ($\beta = 0.47$, $p = 0.001$) is fully mediated through traits, self-concept, and ultimately skills (VAF = 0.86). Interestingly, the direct positive and significant influence of motives on subjective norms ($\beta = 0.33$, $p = 0.000$) is suppressed by the existence of and mediation through the other competency clusters (sign change, VAF = 4.49). Also noteworthy is that the direct effect of motives on self-efficacy ($\beta = 0.64$, $p = 0.00$) is partially mediated through and absorbed by traits (VAF = 0.69). Thus, hypotheses H2a, H2b, H2c are confirmed. The analyses further revealed that the significant direct effect of traits on attitude ($\beta = 0.50$, $p = 0.00$) is largely absorbed by self-concept and skills (VAF = 0.60). Likewise, the effect of traits on subjective norms ($\beta = 0.45$, $p = 0.00$) is absorbed by self-concept, skills, and knowledge (VAF = 0.45). Consequently, H3a and H3b are also confirmed. Remarkably, the direct influence of self-concept on attitudes ($\beta = 0.35$, $p = 0.00$) is totally suppressed when skills are included as a mediator (sign change, VAF = 1.07). There was no direct effect of self-concept on subjective norms ($\beta = 0.23$, $p = 0.217$) when examining them separately. Conversely, self-concept does influence self-efficacy ($\beta = 0.54$, $p = 0.00$). This effect disappears when considering the entire CIM. Nonetheless, H4a and H4c are confirmed. When examined separately, skills ($\beta = 0.61$, $p = 0.00$) were also found to have a strong direct effect on self-efficacy. Similarly, knowledge ($\beta = 0.61$, $p = 0.00$) significantly affected self-efficacy. Thus, H5c and H6c are supported. However, these effects are absorbed and become insignificant when the other competency clusters are included.

After having examined the direct and indirect relationships between the competency clusters and the intentional antecedents, Table 2 provides an overview of the hypotheses test results.

Discussion

The present research contributes to the existing knowledge on the relation between entrepreneurial competencies and entrepreneurial intentions by offering a more integrated framework, which allows us to demonstrate that the five analyzed competency clusters, i.e., motives, traits, self-concept, skills, and knowledge, play an important role in the formation of entrepreneurial intentions. The proposed competency intent model explained 71% of the variance of entrepreneurial intentions. As expected, the results of this research confirm that attitude towards entrepreneurship and subjective norms have direct and positive influences on entrepreneurial intentions. In contrast to earlier findings, however, no significant effect of self-efficacy on intentions was detected. In this study, motives, traits, self-concept, skills, and knowledge were found to have significant direct effects on attitudes, subjective norms, and self-efficacy respectively when considered separately. The most interesting finding is that some of these direct effects disappear when the entire model is examined. This is due to the presence of mediating variables. However, the direct effects of skills on attitudes, skills and knowledge on subjective norms, and traits on self-efficacy remain significant. Despite its

exploratory nature, the findings of this study offer some evidence that not only the visible competencies, i.e., skills and knowledge, drive entrepreneurial intentions alone. Rather, the less visible competencies, i.e., motives, traits, and self-concept, play a decisive role as well, and their effects on the intentional antecedents are often mediated through the visible competencies.

Study Limitations and Future Research Directions

The present research has several limitations. First, it shows that the competency intent model can be used to predict entrepreneurial intentions of undergraduate and graduate business students. Hence, it is necessary to investigate whether these results remain robust in larger and more heterogeneous samples. Second, the scales used in this current study were useful to test the hypothesized relationships between the five competency clusters and the three antecedents of entrepreneurial intent. However, the scales used to assess self-efficacy and entrepreneurial intent failed to reproduce the so often demonstrated relationship between both variables. A suggestion for future research would be to utilize other traditional scales to establish this relationship and to subsequently examine whether there are additional mediated effects of the competency clusters on entrepreneurial intent. Third, only a handful of competencies were chosen as indicators of their corresponding competency cluster. It is quite possible that the use of other competencies would have altered the results. Hence, researchers should examine whether each competency cluster retains its importance when additional or different competencies are included.

Practical Implications

The findings of this study provide empirical support that a number of fundamental, interrelated competencies have a strong positive impact on entrepreneurial intentions. Even though further validation of the proposed model is required, its preliminary results suggest several important implications for policy makers, practitioners, and educators. If the aim is to increase entrepreneurial activity, then entrepreneurial competencies offer a considerable leverage as they result in an increased entrepreneurial intent. Instead of teaching young adults and potential entrepreneurs *about* entrepreneurship, as it is common practice, they should rather be trained *for* entrepreneurship and equipped with essential entrepreneurial competencies. The results of this study indicate that some competencies, e.g., need for achievement, drive and energy, perseverance, creativity, persuasion skills, and tolerance of ambiguity, are more relevant than others for developing an entrepreneurial intent. Once these and additional competencies are clearly known, they may be directly fostered and nurtured not only in specific entrepreneurship programs in higher education but already in secondary education. A large number of adolescents with any vocational preference will then be endowed with the essential competencies and may more often consider self-employment as a potential career path. Policy makers should therefore address entrepreneurship promoting activities to a much larger and diverse target group in society, strengthen its entrepreneurial intention, and encourage its entrepreneurial behavior. As a consequence, future nascent entrepreneurs could originate from many different disciplines, thus requiring new support programs that serve their distinct needs.

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Exploring the model of the entrepreneurial process

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Exploring the model of the entrepreneurial process

Abstract

Understanding the content of the entrepreneurial process is essential for creating better policy and practical training of nascent entrepreneurs, especially for accelerating the growth of new companies. Some studies devoted to venture launch see the gap between process orientation in entrepreneurship pedagogy and academic variance research models.

This paper aims to conceptualize the novel multi-dimensional process model of the entrepreneurial (venture creation) process. The theoretical approach includes a holistic view of the entrepreneurial process based on different theories and disciplines. Holistic view of the nature of the entrepreneurial process identifies three components leading venture launch – these are entrepreneurial personal traits, mental systems and resources of an entrepreneur and the team. This tripartite categorization implicates explicitly on the different sources of origin of the components of the entrepreneurial process. Entrepreneurial learning means interactions between the components of the entrepreneurial process under the impact of the environment and process (performance) outcomes. Findings of the model and suggestions for further studies are divided into three groups: understanding the content of the entrepreneurial process, outcomes for an entrepreneurial pedagogy, and entrepreneurship policy and support system.

1. Introduction

Knowledge about the content of the entrepreneurial process is essential not only because of academic aspiration of new knowledge but also for creating better policy and practical training of nascent entrepreneurs, especially for accelerating the growth of new companies.

Currently, the studies of the entrepreneurial process are mainly based on the differentiation of the variables, the stages and the decision-points in the temporal dimension on the level of the entrepreneur. McMullen and Dimov (2013) see the gap between process orientation in an entrepreneurial pedagogy and academic variance research models. There also seems insufficient knowledge about the methodology base to study the entrepreneurial process. Moroz and Hindle (2012) point out that the models of the entrepreneurial process are highly fragmented and are insufficient “to synthesize an understanding of the entrepreneurial process that is both generic and distinct”.

Bhave (1994) argues that the entrepreneurial process is nonlinear, iterative, feedback-driven, conceptual and physical process. The problem arises from the character of the research object – the entrepreneurial process, variables of which contain myriad of actors, behavioral, cognitive and other factors, different resources and actions in a particular environment and timeframe. Entrepreneurial process has also been seen as a process of resource and capabilities accumulation (Keupp & Gassmann 2009), including knowledge (Shane 2000). Many entrepreneurial (new venture creation) processes perform as potentially global (Eurofound 2012) based on innovative technology idea. Brem (2011) has demonstrated that the entrepreneurial and the innovation processes are similar or even identical at the organization level. Variance is related to the embeddedness of the process – is this taking place in existing organization (McFadzean, O'Loughlin & Shaw 2005) or concurred with the new venture launch. Is the process targeted to new product launch or to make a new market, or to grow the market share. These all topics raise the question, in what dimensions to study the entrepreneurial process. How many such dimensions to consider? How to enhance the adequacy of the model for higher explanatory and predictive power for academic and practical purposes?

This paper aims to conceptualize the novel multi-dimensional process model of the entrepreneurial venture creation process.

The basis to conceptualization is practice-based learning and training model in the supported by coaches venture creation and development process. Partly the model is the result of intuitive generalization of the author's experience (Mets, Raudsaar and Summatavet 2013). The background for that can be described in different aspects. First, the author has been an entrepreneur himself. Second, the author as trainer has facilitated entrepreneurial journey of hundreds (or even more than thousand) adult trainees and students. Third, the author creating entrepreneurship center and supporting entrepreneurial learning and training in an academic environment shared own experience and observed colleagues facilitating enterprise among students as well as adult people. Of course, in this model creation process the author has learned much from trainers and academic colleagues internationally. Therefore, the idea of disharmony between models of classroom practice and academic research by McMullen and Dimov (2013) sympathized to the author. Fortunately, ideas of engaged scholarship (Vand De Ven and Johnson 2006; Van De Ven 2007) create some approaches to link academic and practitioner's view on the entrepreneurial process. The author sees hereby an opportunity to entrain practitioner's models based on own experience into academic research framework. If Vand De Ven and Johnson (2006) and Van De Ven (2007) suggest for that purposes pluralistic collective of scholars and practitioners. In the current study, both sides of engaged scholarship are represented in the person of a lonely author. The author makes that attempt although engaged scholarship in management studies are profoundly criticized (McKelvey 2006) and considered as an idealistic attempt to link incompatible things of the real life, and leading to "bad science".

The following model development and research strategy will be implemented: (1) short overview of the entrepreneurial process based on various theories and disciplines, (2) creating a synthetic model by integrating stronger sides of both – the process and the variance methodology approaches, and (3) adjustment of the model for the new venture creation and the accelerated growth of the SMEs.

Methodologically that means the need to generalize not only the qualitative and quantitative studies, but also using different theories and models for better understanding and explanation of the entrepreneurial process. Hereby should be mentioned that many empirical studies on entrepreneurs' traits and entrepreneurial (venture growth) processes are excellent sources of knowledge about the factors shaping successful entrepreneurial process. Venture creation context is followed by current paper further, although entrepreneurial process can take place in any organization creating new social or economic value.

2. Short overview of entrepreneurial process studies

Process theory approach using narrative and grounded theory methods within venture creation studies started from explanation the stages of opportunity development (Bhave 1994), disclosing stages of the entrepreneurial process in venture creation context. Bhave suggests externally and internally stimulated versions of opportunity recognition process ways with different sequences of the sub-processes of opportunity filtration, selection, and refinement. His process model could be characterized as an iterative, nonlinear, (operational & strategic) customer feedback driven, conceptual and physical process covering the three stages: Opportunity, Technology Setup & Organization Creation, and Exchange Stage. Entrepreneurial process model was improved with the effectuation theory by Sarasvathy (2001); her model has been also categorized as dynamic (Moroz & Hindle 2012). According to the effectuation theory (Sarasvathy 2008), to realize the opportunity in the entrepreneurial process, it needs to adapt the means and goals alternately. Krueger (2003) analyzed entrepreneurial process in the context of entrepreneurial psychology. The constructivist perspective argues that the entrepreneurial opportunity cannot exist apart from the entrepreneur and the entrepreneurial opportunity crosses stages of conceptualization and objectification within the entrepreneur's social framework before enactment.

Entrepreneurial process is not linear in temporary scale as seen from the cyclic character of learning according to Kolb (1984).

Generalizing the models above could be argued that these include distinct actions and decision points of the entrepreneurial process not entirely covering that process. For example, if some feedback loops are taken into account (Bhave 1994; Sarasvathy 2008, 2001), then some personality, learning and resources' aspects remain not disclosed. Especially are missing characteristics of skills, cognition and personal traits describing (nascent) entrepreneur as well as trainee in the incubation program.

Variance theory approach uses models based on static linkage of variables and frequently targeted using statistical analysis. Here can be found examples from model-building as well as from empirical studies. Gartner (1985) outlines four dimensions: individual(s), process – the activities undertaken by these individual(s), environment, and organization (structure and strategy) meeting the complexity of the new venture creation process. These dimensions developed into the entire model integrating the new venture creation process with models of small firm performance (Naffziger, Hornsby & Kuratko 1994). The model links the cluster of personal variables, environment and goal, business environment and the idea – all preceding the entrepreneurial decision, strategy and management to firm outcomes and feedback with “the impact of both intrinsic and extrinsic rewards for sustained behavior” (ibid). Besides genuine linkages between the variables, causal context gives better understanding of the process. Baum, Locke and Smith (2001) present a multidimensional model of venture growth with 17 independent variables (dimensions) confirming indirect and direct effects of personality, general and specific competencies, motivation, strategy and environment on the result of the entrepreneurial process. A list of indicators of performance of the entrepreneurial process include a launch of venture or product (Haeussler, Patzelt & Zahra 2012), reaching the market (Jones & Coviello 2005), sales, positive cash-flow, profitability, etc. (Gordon 2012).

Variance approach has led studies to potentially high generality and simplicity and modest accuracy of results (Langley 1999).

Process approach can reach high accuracy (Langley 1999), but also the more sophisticated and potentially lower generality of outcomes. Later studies (Bitektine 2007) have partly disproved the viewpoint of the lower generality of theory-building based on qualitative methods. The concepts and models of the entrepreneurial process are multidimensional (Gartner 1985; Baum et al. 2001), mainly focused on the stages or growth, and manipulation of entrepreneurial opportunity and entrepreneurial traits' concepts, and part of these in both approaches are feedback-driven (Bhave 1994; Naffziger, et al. 1994; Sarasvathy 2008). The logic of the entrepreneurial process and entrepreneurial learning can be identified from the both research methods. These both may include the following sub-processes or actions: Idea generation, Opportunity recognition, Opportunity development and Venture launch with different levels of differentiation of stages (Davidsson 2005; Sarasvathy et al. 2005). Venture launch could also be understood as the decision of opportunity exploitation.

A six years study by Baum and Locke (2004) measuring 31 variables demonstrates importance of the entrepreneurial traits, skills, and motivation to venture growth. They show that comparing the direct model, a model considering direct and indirect effects of traits on the performance increases explained variance from 31% to 35%. The sample of the study is quite homogeneous – origin of the 229 respondents comes from a single industry. That raises the question of the remaining share of variance explanation.

Integrating different types of variables (e.g. resources and stages) has become the real challenge of the research. There is a need to differentiate entrepreneurial process-related intrinsic variables from micro- and macro-environment. That means, an entrepreneurial process is a complex phenomenon.

Resource-based view (RBV) includes among resources all tangible and intangible assets controlled by a firm. These are physical, human and organizational capital resources (Barney 1991). As Barney (1991) mentions, not all aspects of firm's capital are strategically relevant resources. That means – some of the assets can be not resources at all, or are that in some period and are not in another period. In another situation, some of the assets/elements, for example, knowledge or cognitive maps are latent in resource meaning until it is matching a new opportunity. These mental constructs are accompanying potential entrepreneur until triggering opportunity discovery and new entrepreneurial process. Some of the constructs can have an indirect impact being a catalyst for other associations supporting the central process.

Decisions and actions of the entrepreneur in the environment are based not only on explicit knowledge and experience. Mental world/systems of the person is/are also in continuous change reflecting new experiences and learning. In the new situations and before options not met earlier, person's cognitive/mental maps are the means supporting decision-making (Brännback & Carsrud 2009; Kyrö, Seikkula-Leino & Mylläri 2011). If the entrepreneurial traits characterize the person's volitional behavior then his/her mental system is like compass giving orientation and focus to that. Mental system concept has quite much similarity to virtual and spiritual world in knowledge management context (Nonaka & Konno 1998).

Cope (2003) proposes entrepreneurial learning as learning through experience, notably higher level of learning, which is described by Argyris (1976) as double-loop learning and which contains three distinctive, interrelated elements: dynamic temporal phases, interrelated processes, and overarching characteristics. Lumpkin (2005) studies the role of organizational learning in two-phase (discovery and formation) feedback driven opportunity recognition process. Baum, Bird and Singh (2011) point the importance of practical intelligence, based on concrete experience and active experimentation, in venture growth.

Concluding the short overview of the models of the entrepreneurial process could be found that existing models are disbursed, these are describing different aspects in the process but do not integrate them into the whole and do not link different facets. For example, some models are focused on actions and decision points, but say too little about the resources and personality traits in that process. In the real entrepreneurial process, entrepreneur cannot focus only on one side of the process and ignore other aspects. That is the topic of process-based learning and training in entrepreneurship – nascent entrepreneur or trainee needs integration of detailed and holistic view of the process and competencies to embody that in the real life.

3. Modeling the entrepreneurial process

Trying to model the entrepreneurial process, one of the leading questions in the academic literature is about the form: outcome or event-driven approach (Van de Ven & Engleman 2004). That means examination of two different types of research question (Van de Ven 2007), which in the simplified way could formulate as follows:

- (1) What is, and what is behind the phenomenon?
- (2) How the phenomenon works?

Differences between these “what” and “how” questions are seen corresponding to variance and process models, respectively. The same applies to the definition and meaning of “entrepreneurial process” in these two approaches. In the first context, the term involves variables that pertain to actions. In the second context, process means narrative how things happen. Van de Ven (2007) warns of mixing the terms of two methodology approaches and assessing one of the approaches using the rules of the other methodology. Hereby the initial model comes from practice trying to describe the best example of the entrepreneurial process and not to be generated according to classical methodology basis.

The model in Figure 1 originates from the open space classroom where frequently the outcome for the trainee(s) is the launch of own business or joint venture with the team. Similar

learning based entrepreneurial process takes place in the business incubator or accelerator environment. The model can describe any venture creation process, including the cases of the independent entrepreneur outside formal support structures. Of course, besides author's personal experience, the content of the schema is partly influenced by existing theories and models briefly disclosed in the preceding section although there is no only concrete pattern or theory followed. Rather could be argued that Figure 1 is the result of generalization and integration of practitioner's view and many different theories.

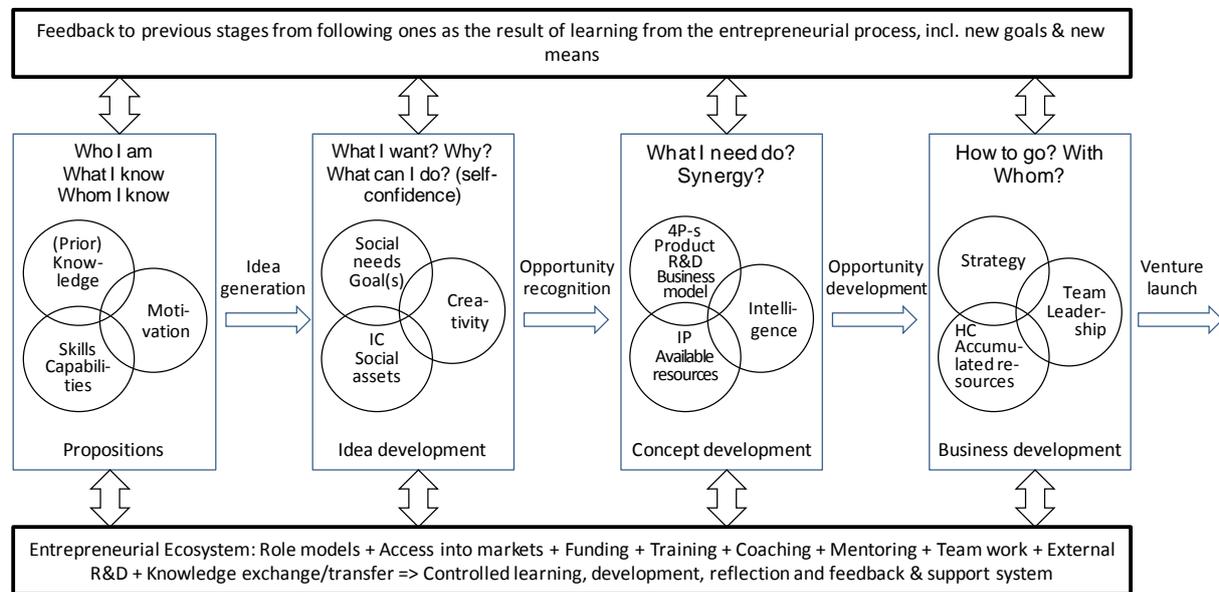


Figure 1 Functional stage model of the entrepreneurial process (modified Mets et al. 2013)

Process is described as the following each other stages *Propositions*, *Idea development*, *Concept development* and *Business development*. The stages are linked in series with the entrepreneurial acts – outcomes of these stages *Idea generation (Idea)*, *Opportunity recognition (Recognised opportunity)*, *Opportunity development (Developed opportunity)* and finally to *Venture growth* or *Opportunity exploitation* (not imaged, following the process in Fig 1) via *Venture launch* which can be understood as decision to exploit the opportunity.

Describing the embeddedness of the whole entrepreneurial process, the use of the silo concept is suggested, to label the combination of physical and mental shapes corresponding to a single stage *Propositions*, *Idea development*, *Concept development* and *Business development* as mentioned in the former publication (Mets, Raudsaar & Summatavet 2013). That means embedding propositions, outcomes and other intangible and tangible means and resources of sub-processes and stages *Propositions*, *Idea development*, *Concept development* and *Business development* in silo, which content and internal processes are driven and controlled by the direct (entrepreneurial) processes of venture creation as well as by the feedback chains.

The model bases on the idea that the entrepreneurial process is a complex phenomenon. To deepen understanding as well as to generalize wider the entrepreneurial process there is the need for using different theories: individual and organizational learning, resource-based view of the firm, dynamic capabilities, knowledge and competence management, motivation, personality and behavioral theories, and entrepreneurial ecosystem. Entrepreneurial process is not linear in temporary scale as seen from the cyclic character of learning according to Kolb (1984). In the entrepreneurial process, it needs to adapt means and goals alternately to realize the idea in the concrete timeframe (Sarasvathy 2008). The mechanism of effectuation with the relevant reflexive questions (Who I am? What I want? What I need do? etc.) leading entrepreneur to own goals, means and strategy (ibid) are presented as a part of decision-making

in the stages of the entrepreneurial process. The effectuation questions as well any other (business development) performance outcome options can lead an entrepreneur back to the previous stages – these circumstances reflect in the feedback loops.

Presenting the model in temporal sequence of stages non-linearity of the entrepreneurial process is considered (Fig 1). The process permeates most or all components of silos. The four-stage model has been tested on the example of three start-ups in social, creative and technology entrepreneurship (Mets, Raudsaar & Summatavet 2013). Similar results based on eight “born global” case studies have been reached in previous publications (Mets 2012). Hereby, for better organization, in the figure leading constructs/variables of stages for the current example are presented following the logic of a holistic model (Fig 1). The list of variables is practically inexhaustible as could be seen from the previous sections of the paper. The stages are feedback driven. That means although the result of *Idea development* process is *Opportunity recognition* (act), only the acceptance feedback signal from the *Concept development* stage closes the previous *Idea development* stage. Until that *Idea development* stage is active, and activation of modified *Idea generation* act is even possible. Sometimes the feedback of *Business development* stage can trigger the process from the very beginning again, of course, on a new level now – see analogy with the spiral learning process (Kolb & Kolb 2007).

The content of a silo is not static. Components of it are in reciprocal interaction as well as in interaction with the entrepreneurial process and environment. Sequence of actions is important in venture institutionalization process (Gordon 2012). The meaning and the role and power of variables are changing in the course of the entrepreneurial process depending on the process needs and environment (Sarasvathy 2001; Baum & Locke 2004).

It is unrealistic to suppose that the entrepreneur in the entrepreneurial learning process is deciding all the points based on own experience and experimentation. Important role, especially at the beginning of the entrepreneurial career have role models (Venkataraman 2004), observations, analogy with former personal experience and based on different knowledge cognitive maps. Mental maps enable to organize own perception and understanding of the situation, causal process logic and give a forecast of expected future.

4. Content and processes of the entrepreneurial silo

Integrating different types of variables (e.g. resources and stages) has become the real challenge of the research. There is a need to differentiate entrepreneurial process-related intrinsic variables from micro- and macro-environment. Besides, there is no answer about the embeddedness of the process although that question has been raised in the literature before (Jones & Coviello 2005). For better explanation of complex phenomena holonic view could be useful, “[h]olons are entities that are being wholes, and parts of a greater whole, at the same time” (Van Eijnatten 2004, based on Koestler 1967, 1978). The construct of holon gives a chance to integrate entities of different level into the system.

The *Silo*, being *holon* of nature, integrates three lower level *holons* and belongs to a higher level *holon* – *Entrepreneurial Ecosystem* (Fig 2). Three holons have inter-linkages between each other as well as entrepreneurial ecosystem, including output (feedback signal) of the entrepreneurial process. The meaning of *Entrepreneurial Silo* in the early stages is nascent venture, as presented in Fig 1, the core framework for maturing of the future business.

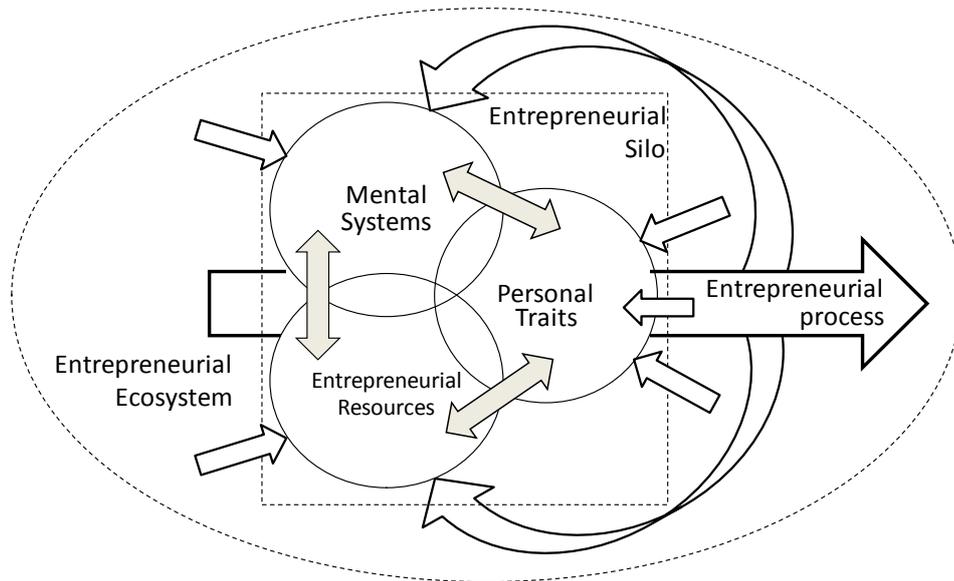


Figure 2 Model of the entrepreneurial process: holistic and holonic view

Specific topic of the paper is the content of entrepreneurial silo. As could be seen the label names of holons by stages of the entrepreneurial process (Fig 1) differ from each other. The reason for that comes from a practical matter not to overload the space of drawing. The content of primary holons in the model is much wider than labelled in Fig 1. The leading concepts (or constructs or dimensions) of silo in the concrete stage (Fig 1) are shown only. In the holistic model of the entrepreneurial process (Fig 2) all these items of similar dimension of all stages should be merged within the concrete holon(s). Somehow the label (name) of the holon must generalize the content of it. Hereby the author makes an attempt to find out the dimensions generalizing the content of holons linking different stages. It is assumed that the concepts displayed in the same position of different stages belong to the same *holon*. For example, Skills & Capabilities of Propositions' stage, IC (intellectual capital) & Social assets of Idea development stage, IP (intellectual property) & Available resources of Concept development stage and HC (human capital) & Accumulated resources of Business development stage are presented as the elements of the same *holon* Entrepreneurial Resources. (Of course, from the definition above, can come that these elements are independent *holons* of lower level.) In variance theory, this assumption can be tested by factor analysis (having sufficient number of measurements). Problems of measurement will be discussed in the section p. 7.

Preferences for three-component model of the Entrepreneurial Silo come from author's former educational practice and organisation studies (Mets & Torokoff 2007). The standpoint is also supported by the theoretical tripartite model of learning outcomes (Kennedy et al., 2006; Kraiger et al., 1993). This model in the example of entrepreneurial training was recently proved using structural equation modeling with the sample of 249 students and graduates (Kozlinska, Mets & Rõigas 2014). The study has based on tripartite framework, where learning outcomes have expressed as cognitive, skill-based and affective (attitude) competences. Unfortunately, the learning outcomes framework does not contain a full spectrum of personality and resource characteristics of the entrepreneurial silo (process). Although, many papers are devoted to the study of entrepreneurial competences (e.g. Lans, Verstegen and Mulder 2011; Mitchelmore & Rowley 2013; Baum, Locke & Smith 2001) there still is a challenge for complex comparative measurements in a real entrepreneurial process and in an educational process.

Entrepreneurial Personal Traits include temperament, self-efficacy, tenacity, creativity, passion, proactivity, enthusiasm and other personal characteristics (list partly based on Baum & Locke 2004; Baum, Locke & Smith 2001; Kyrö, Seikkula-Leino & Mylläri 2011) of

entrepreneur's behaviour embedded in the person or the team. Mental Systems contain mental models, cognitive maps, philosophy, mindset, procedural and declarative knowledge, vision, goals, strategy and other mental constructs created by the person/entrepreneur and his/her team in the learning and experience processes. Some of these constructs, for example, explicit and tacit knowledge, can also serve as intangible asset or resource in the entrepreneurial process context. The Personal Traits, Mental Systems and Entrepreneurial Resources – these three domains are in mutual reciprocal interaction as well as under the impact of the Entrepreneurial Ecosystem – higher-level domain. The content of the Entrepreneurial Silo is changing together with the temporal Entrepreneurial process influenced by the feedback of outcome (performance) of the process.

One can suppose that successful entrepreneurs are not only better learners from the concrete situations, but they also have better cognitive maps for decision-making. Stages result with concrete acts: Idea generation, Opportunity recognition, and Opportunity development until fitting to readiness to Opportunity exploitation that is at the same time Venture launch. Business development can continue after starting venture – in the real business process. Of course, entrepreneurial learning continues after Venture launch in the following stages, not presented here.

5. Entrepreneurial journey of venture creation

McMullen and Dimov (2013) delineate the schema with processes permeating through variables; each process (effort) tracks different trajectories leading to the outcome. The conclusion is that the entrepreneurship is a process phenomenon.

Hereby a description of the entrepreneurial process based on the model Fig 1 is presented in two axes (Fig 3): Venture maturity (*Stage*) and Time (*t*).

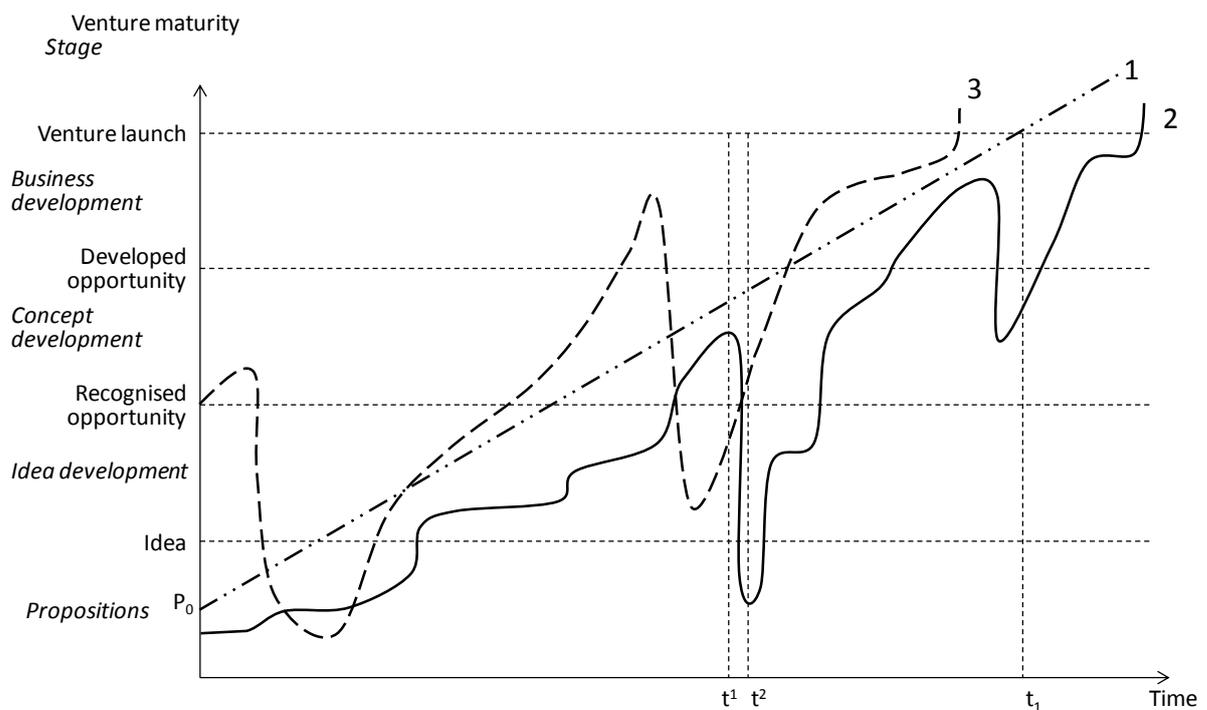


Figure 3 Entrepreneurial journey of venture creation (theoretical example Cases 1, 2 & 3)

Venture maturity scale bases on the entrepreneurial process model in its central development logic from initial Propositions stage towards Business development stage. Division between stages is marked with the dash lines Idea, Recognised opportunity,

Developed opportunity and Venture launch. Trajectory of the Case 1 is the version of an ideal linear process of venture creation started from the level P_0 of propositions (corresponding to prior knowledge, skills, capabilities and other initial characteristics) and reaching Venture launch at the moment t_1 . Trajectory 2 gives more realistic realization of the development process. In some period, the growth of the curve is faster, in some period – slower, also drastic leaps down are possible. For example, at the moment t^2 the process starts again from the inception. Reason for that can be a need to vary the idea fitting to motivation, skills, and knowledge of the entrepreneur. In some period, e.g. $t^1 \dots t^2$, the silo can have undetermined status (process interruption) including elements of several stages until, as the result of feedback signals, transition and relaxation process entrepreneur reaches the decision how to continue. Hereby trajectory of the Case 2 starts from idea generation again, following expected learning curve is faster after t^2 as an entrepreneur is more experienced now. Development trajectory of the Case 3 describes the situation where the entrepreneur starts from Opportunity recognition and reaches the solutions to his/her entrepreneurial process in further learning. This can happen, for example, following lean start-up idea from primary market test and developing business idea further after the first experience with the customers. Customer involvement can be used in all the development stages.

In reality entrepreneurial journey can follow very different curves with various impacts, interruptions and transitions, and relaxation processes.

6. Process perspective of the model

One can suppose that the primary carrier of new venture (creation) process is an entrepreneur (or his/her team) with his/her/their personality traits and all related tangible and intangible assets, which conditionally are located in a silo. A content of the silo is in dynamic changes from one stage into another. There are particular entrepreneurial action and decision points between the stages. That means – transition from previous to the following stage is a qualitative change. However, even these qualitative changes because of feedback chains can recur several times on a higher level with renewed content of the silo in the entrepreneurial learning and knowledge creation process. Usually, such learning is described as a spiral process (Nonaka & Konno 1998; Kolb & Kolb 2007).

The decision points as well as possible opportunity fields and competencies in the entrepreneurial process can be mapped analysing entrepreneurial trajectory of former entrepreneurial processes. Of course, the content of the process should be business field specific. Depending entrepreneur's experience and capabilities so far the knowledge and competencies can differ. The entrepreneurial process model as presented in Fig 1 is a roadmap for the future entrepreneur. How much he/she should know that roadmap before leaving for the journey, it is still a question to look for an answer.

From the entrepreneurial journey, Fig 3 can derive the process what happens to the competencies of the entrepreneur and the team. The trajectory description of the process says when and which competencies are needed to keep venture creation ongoing. If the schema Fig 1 presents the leading competencies by the stages generally then in every concrete start-up case the needs of the entrepreneur may differ from each other. In the entrepreneurship training/pedagogy that means the question how individualized and unified methods to implement? Alternatively, how divergent could be competencies of training groups? The social constructivist approach says that the role of trainer or coach is to support the trainee in his/her entrepreneurial journey. However, there is still no answer how sharp and directed the guidance should be.

7. Variance theory perspective of the model

The static variables in the variance theory approach do not describe the dynamics of the events in the process. However, the studies of variance approach have created comprehensive long list of variables/components/features counted in the process studies. Variables have intangible as well as a tangible character. Measurement of the content of holons (independent variables) in a silo is a real challenge for further studies in the following directions:

- 1) Testing the pertinence of the tripartite model of process-based entrepreneurial training outcomes and competence model of the real entrepreneurial process.
- 2) Timing of the measurements of variables in accordance with the stages of the entrepreneurial process.

The first direction presumes are developing the model and instrument for comparative empirical study in both – educational and real business start-up environment. Currently, the training outcome measurement has been done just questioning respondents afterward or at the end of the entrepreneurial training course.

The second option can support better solution. Measurement of the variable only once during or at the end of the entrepreneurial (learning) process likely does not assess the real value of the item necessary for adequate embodiment of the process. Some of factors (variables) are needed only once in the process and in other periods are not resources at all, or their importance is minimal. Consequently, the measurement must happen at the right moment at the right stage of the process. Partly, panel studies try to meet this challenge measuring the process in real time. Unfortunately, maturity of the process in different cases is different, and the same stage can be repeated several times as could be seen from Fig 3. Final results of the process cannot be known beforehand. That means, the moment of measurement is critical in identifying correlation between variables. Moreover, higher explanatory power of the study can be reached by timing of measurement. The role of the variance method remains to consider general legitimacy relations between the variables in the entrepreneurship processes.

8. Concluding remarks

The ideas for the current synthesized entrepreneurial process model have routes from both – the process as well as variance theory. That means (not only) delineating relationship between (dependent and independent) variables, and events (activities, choices, decisions) (Langley 1999), but also creating the strategy for sense-making and explanatory and predictive power of the model. Studies based on variance theory approach have proved the linkages that were well-known by practitioners long before statistical evidence. Reason for that has been the absence of knowledge of relevant measurements. For example, importance of personal characteristics of the entrepreneur in new venture success was accepted by financiers long before it was verified by statistical linkages (Baum and Locke 2004). As mentioned by Langley (1999), there is no only single way to reach an accuracy, generality and simplicity of sense-making. Variance theory remains “causally shallow” and therefore “temporal sequence of independent variables is critical” as is the conclusion from process theory (Van de Ven & Engleman 2004).

In the literature could not identify any research entirely covering the holistic model of the entrepreneurial process suggested above. The model contains three general components (domains) with the potentially long list of independent variables – dimensions. Each of these variables is an independent dimension describing the entrepreneurial process. Findings of the model and suggestions for further studies could be divided into three groups: (1) understanding the content of the entrepreneurial process, (2) outcomes for an entrepreneurial pedagogy, and (3) outcomes for entrepreneurship support system.

Real entrepreneurial process is the source for process based entrepreneurship education and policy supporting entrepreneurship development. From the model presented in Fig 1 come several requirements to keep in mind designing the entrepreneurial process for training

purposes (training program). The same structuration of the entrepreneurial process-based approach should characterize a business incubation and accelerator programs. The central core of the model is Entrepreneurial Silo linking entrepreneurial competences into whole. That means – the model should (describe):

1. present holistic view on the entrepreneurial process;
2. combine knowledge and elements from both process and variance approaches;
3. present the entrepreneurial process in dynamics;
4. entrepreneurial learning permeating the stages and elements of the entrepreneurial process;
5. entrepreneurial process alternating different phases linked to each other by entrepreneurial acts;
6. account resources and personality traits of the entrepreneur;
7. connections between the stages as continuous and feedback-driven by signals of the process and environment.

Following the model creation above, the core components of the entrepreneurial process are Entrepreneurial Resources, Personal Traits, and Mental Systems, which are partly overlapping each other, partly interchangeable in the processes. Physical, including financial, as tangible assets, and capabilities, competences, intellectual assets, as intangible assets are Resources involved by the entrepreneur and his/her team. General (management) and specific (industry and technical) competences (Baum, Locke & Smith 2001) and social capital of the entrepreneur (Portes 1998; Davidsson & Honig 2003) belong to that group.

Outcomes for an entrepreneurial pedagogy and entrepreneurship support system of nascent entrepreneurs are related to the origin of the learning phenomenon and describing that model. A tripartite framework of the learning outcomes of enterprise education has been used more than the last decade. Although, correlation between entrepreneurial knowledge, skills and attitude has been identified (Kozlinska, Mets & Rõigas 2014), there still lacks understanding of causal relations with personality traits – how the entrepreneurial personality traits are formed. It seems that changes in these components, depending on training methodology and personal learning style, have different intensity and speed. There is still too little knowledge about mental models that support entrepreneurial traits in pedagogy, as well as entrepreneurship support system, generally. Further studies of entrepreneur's mental models could indicate which of them, whether and how have more influence on the affective outcomes of a learner or nascent entrepreneur.

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Institutional Factors Affecting Entrepreneurs in an Emerging Economy: A Comparative Study of Different Ethnic Groups

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Abstract

The purpose of the study is to make intelligible how different ethnic groups perceive the institutional environment and context of South Africa as an emerging economy in a state of transition. With the unprecedented changes in the political, economic and social arena there are a growing number of African entrepreneurs in various sectors of the economy, sectors from which they were previously excluded by law and social conventions. However, it is imperative to realise that African entrepreneurs face certain unique constraints, such as institutional bias in favour of the larger firms, distrust of carryover Apartheid-institutions, an over reliance on non-governmental organisations, and the racially exclusive character of the culture of business networks. A survey of 325 entrepreneurs from Durban, KwaZulu-Natal was conducted. The results show that despite operating in the same institutional environment, entrepreneurs from different ethnic groups have significantly different perceptions particularly on predictability of law and policies, general efficiency of providing services, overall government-business interface, and conduciveness of South Africa for entrepreneurship. These results are justified by looking at historical, social and cultural explanations. Implications for policy, practice and future research are presented based on these findings.

Introduction

South Africa is a prominent unique example of a country in transition with a long history of domination, suppression and discrimination. Previously a British colony, it then became an independent republic, with a government that preached separate development, based on race. The adopted policy of Apartheid has had a devastating political, social, and economic impact on the lives of South Africans. The majority of South Africans were marginalised, whereas in other studies of marginalised groups, they were the minority group. Presently, South Africa is a country undergoing radical change in the political, economic and social spheres and therefore this study will make a significant contribution to research. This similar to what Welter & Smallbone (2011) recently found in former Soviet republics, where there are major institutional deficiencies in the business environment, the types of entrepreneurship are heavily influenced by the external environment.

Welter and Smallbone (2011) states that there is growing recognition that entrepreneurial behaviour needs to be interpreted in the context in which it occurs (Low & MacMillan, 1988). This includes the social, spatial, or institutional and societal contexts. Gartner et al (1995: 70) prompts entrepreneurship research to acknowledge the context in which entrepreneurship takes place, as observers “have a tendency to underestimate the influence of external factors and overestimate the influence of internal or personal factors when making judgements about the behaviour of other individuals,” while Baumol (1990: 898) draws attention to the fact that the rules for entrepreneurship “do change dramatically from one time and place to another.” Bruton et al. (2008) assert that although looking at entrepreneurship from a social psychological and organisational behaviour perspective is well established in developed economies, this trend is not apparent in emerging economies. Understanding how cultural and institutional factors affecting behaviour is needed if we want to better understand entrepreneurship in these contexts, where the institutional structures can vary greatly from mature economies (Ahlstrom & Bruton, 2006; Bruton et al., 2008). This is particularly apparent in institutional environments characterized by a high level of ambiguity, uncertainty, and turbulence, such as in emerging economies such as South Africa.

The research will take into consideration several shortcomings of previous research by focussing on three ethnic entrepreneur groups within the same context. In addition, it will take a mixed embeddedness approach and look at a number of interrelated factors affecting the entrepreneurs. In addition, this affirms the recent suggestion made by several authors that when studying entrepreneurship, to consider the links to socio-cultural factors more than economic variables (Bruton et al., 2010; Urbano et al., 2011; Thornton et al., 2011). The institutional approach as well as the mixed embeddedness approach can also provide useful insights for researchers in exploring the complex nature of institutions that affect entrepreneurship in various contexts as well as among different entrepreneurs (Salimath & Cullen, 2010; Urbano et al, 2011).

Entrepreneurship is critically important in South Africa, given the state of the country's economic, social and political challenges (Herrington et al., 2011). The main argument put forward is that different ethnic groups have historically had different levels of access to opportunities, due predominantly to legislation which restricted certain ethnic groups in terms of where they could live, conduct business, and go to school. These opportunities include market forces favouring certain enterprises, access to ownership, personal predisposition towards starting a new firm such as blocked mobility, personal aspirations, education and the ability to mobilise resources from family and government sources (Godsell, 1991). The challenge for future research, however, is to determine the relative impact that this lack of opportunities has had on the different ethnic groups in South Africa (Mitchell, 2003). South Africa is not only a culturally heterogeneous society, but because of its colonial and Apartheid history, different cultural values are expected to influence proclivity towards entrepreneurship among ethnic groups (Urban, 2006).

Furthermore, this research will address a number of key areas, which according to the GEM 2008 report require urgent attention (Maas & Herrington, 2009). Firstly, since South Africa is a very diverse culture, it is imperative to understand how the various ethnic entrepreneur groups conduct business. Secondly, there is a need to conduct empirical research in the South African context. Thirdly, there is a shortage of primary research on the various ethnic groups, rather than relying on secondary information. Therefore, this research project will focus on fulfilling these crucial shortcomings of previous research in the South African context.

The South African Context

In discussing entrepreneurship in the South African context, one has to take into account the complexities of the unique cultural, political and socio-economical forces impacting on the country (Iheduru, 1998). Many of the inequalities created and maintained by Apartheid still remain in South Africa. The country has one of the most unequal income distribution patterns in the world, with approximately 60 percent of the population earning less than US\$7,000 per annum, whereas 2 percent of the population earns more than US\$50,000 per annum. Poverty in South Africa is still largely defined by skin colour, with Blacks constituting the poorest layer, despite the government implementing a policy of Black Economic Empowerment (BEE), Blacks make up over 90 percent of the poor but only 79 percent of the population.

Apartheid both limited job opportunities in the formal economy for Black South Africans and restricted the right of non-White entrepreneurs to establish and own businesses (Lund & Skinner, 2004). The impact of discriminatory legislation resulted in low skills, lack of an entrepreneurial tradition and weak SME network institutions such as business associations. The legacy of entrenched economic dualism in South Africa, with an increasingly capital-intensive

‘first economy,’ has led to the ‘missing middle’ (i.e. lack of small formal-sector firms), which is likely to have an adverse effect on economic growth (Brink et al., 2003: 1).

According to a World Bank report (2007), South Africa’s industrial policy in the 1990s focused on reducing barriers on access to finance and information for entrepreneurs. In addition, attention was paid to reducing barriers to entry for youth, women and Black-owned businesses in order to redress systemic disadvantages and improve equity. Also, overcoming systemic constraints on networking/contracting between firms to improve information sharing and inducing firms to invest more on skills training were focused upon. The objective was to increase the employment of Black workers, by lowering the cost of labour to offset these market impediments, through empowerment schemes, and by directly encouraging labour intensive production through small enterprise. According to the World Bank’s Doing Business database (Doing Business, 2005), the difficulty of hiring and firing is higher than in all of the comparator countries, with labour skills being in short supply because of the past segmentation of education, labour markets and economic isolation (World Bank, 2007).

The situation of the different ethnic groups in South Africa is of particular interest here. If we use the terminology still common in South Africa (but often criticized as remnant of Apartheid) and differentiate between Black, Coloured (mix of Black and non-Black), White and Indian/Asian South Africans, there is a vast difference in their Total Entrepreneurial Activity (TEA) rates. While the TEA rates of Black and Coloured South Africans are low (4.3 and 2.9% respectively), those of White and Indian South Africans are high (13.2 and 16.1% respectively). Whites and Indians are three to five times more active in the self-employment sector than their Black and Coloured counterparts (Preisendorfer et al., 2012).

In addition to the fact that Blacks and Coloureds are less often engaged in entrepreneurial ventures, a further finding of official statistics and empirical studies is that when they are involved in entrepreneurial activities, it is in much smaller businesses (Babo, 2004). In fact, most businesses owned by Blacks and Coloureds are informal “survivalists,” (i.e., very small-scale). GEM studies for different years categorize approximately one-third of all business start-ups in South Africa as necessity-driven as opposed to opportunity-driven entrepreneurs. This proportion is definitely higher if confined to businesses of Blacks and Coloureds (Klemz et al., 2006; Woodward et al., 2011). When reflecting on the low rate and the low scale of Black entrepreneurship, it should be evident that the future of the South African economy will strongly depend on an expansion of Black entrepreneurship. Almost 90 percent of all South Africans are Blacks or Coloureds, and the younger age groups in particular belong to this overwhelming majority. (Preisendorfer et al, 2012).

Theoretical Framework

Institutional theory

Institutional environments are characterised by the elaboration of rules and requirements to which individual organisations must conform in order to receive legitimacy and support. Berger and Luckman (1967) believe that meaning or reality is socially constructed, which suggests that entrepreneur’s preferences and basic categories of thought as the self, and social processes are shaped by institutional forces (i.e. policies, laws, norms, beliefs and values) in a particular social or national setting.

Williamson (2000) categorizes institutions into three types based on level of social analysis and ranging from underlying norms, traditions, and customs at the highest level to organizational governance structures at the lowest level. These levels include (a) social

embeddedness, (b) institutional environment, and (c) governance. Social embeddedness, at the highest level, consists of informal institutions such as norms, cultural factors, customs, codes of conduct, and traditions. In the short run, culture defines the way individuals process and utilise information and hence may affect the way informal constraints get specified. North (1991) believes that informal constraints arise to coordinate repeated human interaction and these constraints are extensions, and modifications of formal rules; socially sanctioned norms of behaviour; and internally enforced standards of conduct.

The institutional environment, at the intermediate level, consists of formal rules such as property rights and government functions, including policy (Williamson, 2000). The institutional environment is arguably the historic focus of institutional economics and is particularly evident in institutional economics-based institutional entrepreneurship research. The function of these rules is to facilitate political or economic exchange (North, 1991). The structure of rights and the character of their enforcement define the existing opportunities of the entrepreneurs that are realised when they perform exchanges.

The normative dimension or pillar consists of social norms, values, beliefs, and assumptions about human nature and human behaviour that are socially shared and carried by individuals (Veciana & Urbano, 2008). Normative systems define goals or objectives (e.g. winning the game or making a profit) but also designate the appropriate ways to pursue them (e.g. conceptions of fair business practices) (Bruton et al., 2010; Kiss & Danis, 2008).

The institutional factors impacting entrepreneurship include the direct action of governments in constructing and maintaining an environment supportive of entrepreneurship as well as societal norms toward entrepreneurship (Bruton et al., 2010). Specifically, the level of entrepreneurship that develops in a society is directly related to the society's regulations and policies governing the allocation of rewards (Baumol, 1990).

More recently, Veciana and Urbano (2008) suggested that entrepreneurship research from various contexts have brought more evidence supporting the effect of informal constraints on venture creation and economic development. Other authors (Busenitz et al., 2000) have used Kostova's (1997) country institutional profile adapted from Scott's three pillars (Scott, 2008) to indicate differences between the entrepreneurial orientation of several countries. The formal constraints (regulatory dimension) comprise of laws, regulations, and government policies that can either enhance, support or inhibit entrepreneurship. Research on the impact of the regulatory dimension or formal constraints has been scarce and focuses on developing, emerging or transition economics and mainly on public policy and support programs.

Formal institutions and entrepreneurial activity

Institutional theorists acknowledge that cultural constraints do not completely determine human action (DiMaggio, 1988). Rather, institutions set bounds on rationality by restricting the opportunities and alternatives we perceive and, thereby, increase the probability of certain types of behaviour. Furthermore, scholars have indicated that, when considering different types of entrepreneurial activity such as self-employment, small business and initial public offerings, it is important to note that these reflect progressively sophisticated forms of entrepreneurship. Hence, it is logical to suppose that these three types of activities are influenced by different institutional structures (Spencer & Gomez, 2004).

Brunetti, Kisunko, and Weder (1997) had more than 3600 entrepreneurs from 69 countries respond to a survey about problems with uncertainty in dealings with the state. The major

findings were that in less developed countries the majority of entrepreneurs fear policy surprises and unexpected changes in rules that affect their business. Secondly, entrepreneurs stated that the cost of doing business is substantially increased by theft and crime and the authorities do not adequately guarantee their personal safety and do not reliably enforce their property rights. Thirdly, unreliable judiciaries are perceived as major problems in many developing countries. Fourth, entrepreneurs in industrial countries perceived the greatest obstacles to doing business to be tax regulations and high taxes, labour regulations, safety or environmental regulations, financing, regulations for starting new businesses and operations, and general uncertainty about the costs of regulation. In Sub-Saharan Africa, the biggest problems identified were corruption, tax regulations and high taxes, inadequate infrastructure, inflation, crime and theft, and financing. Countries that keep procedural requirements to a minimum generally have a viable and dynamic entrepreneurial sector (Dana, 1990). Research also shows that tax and other start-up incentives have a positive impact on small business establishments and growth (Davidsson, 1991), and that both economic and political-legal factors influence business performance. Aid, economic timing, access to international markets, economic reforms, infrastructure, taxes and government support were also cited as crucial success factors.

Transition context

Puffer, McCarthy, and Boisot (2009) state that transition economies are often characterised by underdeveloped formal institutions, often resulting in an unstable environment and creating a void usually filled by informal ones. Such uncertain conditions are symptomatic of the difficulties entrepreneurs in transition economies face due to the weaknesses in their countries' formal institutions, a construct that has been analysed in numerous works about business in those settings. As in developed economies, the institutional environment is central to their creation and growth. However, the formal institutions that are so supportive for entrepreneurship in developed economies are sorely inadequate in transition economies (Ahlstrom and Bruton, 2006).

Previous studies of businesses in transition countries have identified a multitude of barriers affecting business operations. The most important barriers seem to be formal barriers such as the high level of taxes (Aidis, 2005) and the general regulatory environment (Brunetti et al., 1997; Aidis, 2005). Informal barriers include the implementation of regulations, corruption and unfair competition from the large informal economy. Environmental barriers such as lack of financing and low purchasing power further interfere with SME development.

Several researchers (Acemoglu, 2003; Mair and Marti, 2009) believe that the greatest obstacle to Africa's development is the absence of an enabling environment. Thus, dealing with the challenges of development will entail achieving institutional credibility, which would include means of safeguarding the security of persons and property, systems of incentives, rule of law, basic infrastructure, and stability (economic, political and social).

Research Objectives

The purpose of the study is to make intelligible how different ethnic groups are affected by institutional factors, within the specific socio-economic and institutional context of South Africa as an emerging economy in a state of transition.

The specific research objectives of the study derived from the above mentioned purpose of the research seek to:

1. describe and analyse the institutional context in the region, specifically the political, economic, historical and socio-cultural environment;
2. analyse the ethnic entrepreneurs' perception of the institutional context of South Africa, and
3. present recommendations to improve the institutional environment of entrepreneurship in the province of KwaZulu-Natal, South Africa.

Methodology

The empirical study focused on entrepreneurs from the three dominant ethnic groups in the KwaZulu-Natal province of South Africa: African, European, and Indian. Data for the analysis was collected from entrepreneurs in Durban, the largest city in the province. It was decided to only focus on one urban context, so that attention could be paid to potential differences between the three ethnic groups, keeping the context the same. The African entrepreneur group is an example of a marginalised group, but in South Africa, they are a majority, and not a minority group. Also this group is not an immigrant group, but an indigenous group, and it is important when comparing ethnic groups to have a "native" group. The Indian ethnic group is an example of a group filling the "middleman minority" group. However, in South Africa, they were also marginalised by institutional factors. The European ethnic group have a long history in South Africa, but their position in South Africa has always been one of privilege, and was originally one of being the colonial power. However, with change, firstly with the Afrikaner-led government and then the Black-led government in 1994, their position has changed dramatically. Therefore, within the same context, each ethnic group has historically had a very different experience and position, and this unique position that each group has had, is expected to influence the results collected in this research project.

The sample was selected largely by personal contacts and referrals. Given that most ethnic businesses still operate in areas dominated by specific ethnic groups, research assistants from the same ethnic group as the respondents' were used. This methodology was used by Ram (1994) and Basu and Goswami (1999) in studies conducted in England, and Yoo (2000) and Light and Bonacich (1988) in the US, whereby having interviewers with the same ethnic background led to more access and acceptance by the entrepreneurs.

The study uses measures developed by the World Bank (Brunetti et al., 1997) including predictability of laws and policies, overall government-business interface, efficiency of government in providing basic services and perceived conduciveness of South Africa for entrepreneurship. The data will be analysed using t-tests, Chi-Square and ANOVA. The questionnaire contains mainly multiple-choice questions using a Likert-type scale of 6 choices. The answers for the questions ranged from 1 to 6 with the option of answering 0 if the question was not applicable to the respondent or where there was no response.

Results and Discussion

Predictability of laws and policies

The entrepreneurs were asked a number of questions relating to their perception of the institutional context. In table 1, different obstacles related to predictability of laws and policies are illustrated. Four dimensions were assessed – predictability of changes in law, concerns taken into consideration, coping with changes in suppliers, and coping with changes in customer base. The Chi-square test and ANOVA were used to assess for significant differences between the three groups.

Table 1 Predictability of Laws and Policies

Obstacle	African	Indian	European	χ^2 / F value
Regularly have to cope with changes in rules, laws or policies that affect our business				46.354***a
No	34.3	73.3	54.5	
Yes	64.8	25	45.5	
Changes in laws and policies X value	2.12	2.68	3.42	8.849***b
Government takes into account concerns voiced by the public X value	2.56	4.89	4.43	51.253***b
Regularly have to cope with changes in suppliers that affect your business				68.792***a
No	13.9	66.7	37.8	
Yes	86.1	33.7	6.2	
Changes in suppliers X value	2.37	2.56	3.23	7.187***b
Regularly have to cope with changes in customers that affect your business				69.892***a
No	14.3	67.5	55.8	
Yes	85.7	32.5	44.2	
Changes in suppliers X value	2.05	2.82	3.28	14.0111***b

(*** = $p \leq .001$; ** = $p \leq .01$; * = $p \leq .05$) A = chi-square; b = F value

Referring to table 1, it is evident that there are significant differences between the three groups on their perceptions of the predictability of laws and policies. The entrepreneurs were asked whether they had to cope with changes in rules, laws or policies, and the results show that almost two thirds (64.8%) of the African group stated that they had to deal with changes in rules and laws that affect their businesses. In contrast, less than half (45%) of the European and only a quarter of the Indian entrepreneurs had to deal with these changes. They were then asked to what degree these changes were predictable, and again, the results showed significant difference between the three groups. Almost three quarters (72.9%) of the African entrepreneurs believed that the changes in laws and policies were completely or highly predictable, whereas only a little more than forty percent (41.3%) of the Indian and just over five percent (5.3%) of the European entrepreneurs stated that these changes were completely

or highly predictable. These results indicate that the African group appear to have a more optimistic view of the wider institutional context, whereas the Indian and particularly the European group have a far more pessimistic view of the changing business environment.

The issue of whether the entrepreneurs felt that their concerns were taken into account revealed significant differences between the group, with similar patterns, with more than half (51.1%) of the African group believing that their needs and concerns are always or mostly taken into consideration by the government when changes are suggested. Less than ten percent of the Indian group (6.3%) and European group (4.3%) believe that their voices are heard when changes in laws or policies are raised. Again, these results support the earlier view with both the Indian and European group having a very negative perception of the role of the government in aiding entrepreneurship in this institutional context. The entrepreneurs were asked whether they had to cope with changes in their suppliers, and whether these changes were predictable. Almost ninety percent (86.1%) of the African group stated that had to cope with changes in suppliers, whereas only a third of the Indian group (33.7%) and less than seven percent (6.2%) of the Europeans had to cope with changes. However, when the groups were asked about whether they had to cope with changes in their customers, the results showed different outcomes. The results are similar for both the African and Indian groups, but almost half (44.2%) of the Europeans stated that they had to deal with changes in customers.

On all three obstacles, the African entrepreneurs state that they have to deal with changes in rules and policies, as well as changes in suppliers and customers. Thus, a pattern seems to be emerging that the African entrepreneur does not seem very settled in the entrepreneurial environment. The challenge is to find the reasons for this. One potential reason is the lack of human capital, which included education levels, but perhaps more relevant here, is the business experience. Most evidence from South Africa still shows support for Indian and European entrepreneurs having significantly more experience in the business world and industry in general. Having less experience in adapting to changes in policy, customers or suppliers would then have a bigger impact on the African's business. They basically have not had to deal with this 'ambiguous' environment, and it is alien to them. This is further worsened by their mindset, of been afraid of failing in their venture.

Another potential reason is the lack of confidence in being able to manage the ongoing changes in the entrepreneurial environment. This could be further evidenced by the lack of confidence in what they are doing. Another potential reason is the level of social capital. Previous research from the South African context (Godsell, 1991; Mitchell, 2003) shows support for the fact that the Indian entrepreneur in particular, is able to draw on a wide range of contacts from family, friends and their community in order to assist in his business. The evidence points to the collective 'Indianness' and being willing to help each other. There is also evidence from the European entrepreneur that he gets more support from family and has a wider network of formal networks, so is able, when needed, to get legal, financial, and operational advice. In contrast, the African entrepreneur has a very narrow network, and does not always seem to get the support of the family and friends. Also, the community, at times is against entrepreneurial activity. In certain communities, entrepreneurs are viewed with mistrust and are perceived to be more individualistic rather than community-oriented.

There also seems to be a school of thought that the African entrepreneur has become more like the Western European entrepreneur and looks after himself first. However, what they are missing is the background and experience that many of the European and Indian entrepreneurs have experienced. There is also support for the view that one of the outcomes of Apartheid was

to develop a culture of dependency. For almost fifty years, Africans have been treated as inferior human beings, told what to do, told where to live, and where they could and could not do for work, that over time, this has had a major impact on their mind-set. There is also support that the African group tend to be less risk-taking and initiative takers, which one could argue is due, to some degree, to the history of colonialism and more recently Apartheid.

Overall government-business interface

The study was also concerned with the obstacles that the entrepreneurs faced in doing business. Respondents were asked to judge on a six – point scale, (1= not problematic; 6 = very problematic), on how problematic different policy areas were for doing business. Looking specifically at the African group, financing, labour regulations as well as crime and theft were seen as the most problematic. For the Indian entrepreneurs, crime and theft, tax regulations, and labour regulations were perceived as the most problematic. Crime and theft, inflation and high taxes were the major obstacles identified by the European respondents.

Table 2 Overall government-business interface

Statement	Overall	African	Indian	European	F value
Regulations for starting business	2.48	2.64	2.24	2.65	2.168
Price controls	2.76	2.85	2.58	2.92	.953
Regulations on foreign trade	2.84	3.11	2.67	2.74	2.641*
Financing	2.87	3.42	2.35	2.90	10.245***
Labour regulations	3.23	3.39	3.28	3.00	2.235
Foreign currency regulations	2.71	2.93	2.48	2.77	2.116
Tax regulations and/or high taxes	3.59	2.97	4.20	3.56	12.252***
Inadequate infrastructure	2.58	2.99	2.15	2.71	7.820***
Policy instability	2.52	2.82	2.18	2.64	4.770**
Safety/environmental regulations	2.85	2.84	2.82	2.91	.247
Inflation	3.65	2.91	3.95	4.19	13.105***
Uncertainty on costs of regulation	2.91	2.94	2.61	3.41	4.584**
Crime and theft	3.95	3.18	4.40	4.30	9.966***
Corruption	3.15	3.24	2.96	3.36	1.691
Terrorism	2.47	3.23	1.91	2.15	12.574***
Other	2.21	2.75	1.36	2.75	13.475***

(*** = $p \leq .001$; ** = $p \leq .01$; * = $p \leq .05$)

Based on the results of ANOVA tests, there are a number of significant differences between the three ethnic groups with regard to perceived obstacles in doing business (see table 2). Financing as an obstacle was significantly different between the groups ($F=10.245$; $p=.001$), with it being very problematic for the African group, who had an average score of 3.42, but less of a problem for the Indian group (2.35) and the European group (2.90). There were also significant differences regarding tax regulations between the groups ($F=12.252$; $p=.001$), with the Indian group seeing it as a major obstacle in doing business more than Africans and Europeans. Inflation was also a major problem for the Indian and European respondents, but less so for the Africans. There were significant differences between the groups with regard the issue of crime and theft ($F= 9.966$; $p= .001$). The Indian group scored on average 4.40, European group 4.30 and the African group 3.18 respectively.

Therefore, the results indicate that there were significant differences in the perceptions of obstacles facing their business between the African, Indian and European entrepreneurs on nine of the fifteen obstacles, which included the following: regulations on foreign trade, financing, tax regulation and/or high taxes, inadequate infrastructure, policy instability, inflation, uncertainty on costs of regulation, crime and theft, and terrorism.

General Efficiency of Government in Providing Services

Table 3 shows the results when entrepreneurs were asked how efficient in general the government is in delivering services now.

Table 3 General Efficiency of Government in Delivering Services

Response	African	Indian	European	F value
Very efficient	41.9	3.4	0	31.650***
Efficient	26.7	42.0	2.4	
Mostly efficient	14.3	10.9	24.4	
Mostly inefficient	4.8	14.3	39.0	
Inefficient	7.6	19.3	17.1	
Very inefficient	4.8	10.1	17.1	
X value	2.24	3.34	4.22	

(*** = $p \leq .001$; ** = $p \leq .01$; * = $p \leq .05$)

The results show that the African group see the government as being efficient in delivering services, with almost ninety percent (82.9%) responding as efficient, in answering the question “ how would you generally rate the efficiency of the government in delivering services?” In contrast, only a little less than sixty percent (56.3%) of the Indian and a little over a quarter (26.8%) of the European entrepreneurs having the same believe in the government’s efficiency in delivering services. Based on the results of the ANOVA, the differences are significant (see table 3).

Conduciveness of South Africa to Entrepreneurship

The entrepreneurs were asked whether the country is conducive to entrepreneurship (on a scale from 1 to 5, with 1 representing strongly agree, and 5 strongly disagree), and their responses

show almost eighty percent (78%) of the Indian and two thirds (67%) of the African entrepreneurs see South Africa as being conducive to entrepreneurship (see table 4). In contrast only a little over half (53.3%) of the Europeans stated that they see the country as being conducive to entrepreneurship. Also looking at the mean scores, we again notice that the Indians are the most positive, and the Europeans the least optimistic about conducting business in this environment. Furthermore, the differences between the groups are statistically significant.

Table 4 Conduciveness of South Africa to Entrepreneurship

Response	African	Indian	European	χ^2 / F value
X value	2.06	1.98	2.40	2.357b

(*** = $p \leq .001$; ** = $p \leq .01$; * = $p \leq .05$) (a= chi square test; b = ANOVA result)

The entrepreneurs were then asked, specifically for their ethnic group, how conducive is South Africa for entrepreneurship (see table 5). A similar pattern emerges, but this time, the African entrepreneurs are the most positive, with almost three quarters (72.6%) stating that South Africa is conducive for African entrepreneurs to conduct business.

Table 5 Conduciveness of South Africa to Entrepreneurship (ETHNIC Group)

Response	African	Indian	European	χ^2 / F value
X value	1.96	2.10	2.87	10.924***b

(*** = $p \leq .001$; ** = $p \leq .01$; * = $p \leq .05$) (a= chi square test; b = ANOVA result)

The responses of the Indian entrepreneurs are very similar with 70 percent stating that the country is conducive for their ethnic group to do business. In contrast, only a little over a third (35.5%) of the European entrepreneurs stated that South Africa is conducive for Europeans to conduct business, and more than a quarter stating that it was not conducive. Again, looking at the mean score, the African group are the most positive, with the Europeans being the most pessimistic about the conduciveness of the environment for their ethnic group.

These results on the conduciveness of the environment are a little ambiguous. As expected the Indian entrepreneurs see the country as being very conducive to entrepreneurship. A potential reason for this lies in their unique history in South Africa. They have a long tradition of enterprise, and were able to survive during Apartheid, and there is every reason to expect them to survive and flourish under the new democracy. They are at ease with their ethnic minority position in South Africa and have managed to find ways of being successful, irrespective of the wider context.

With the African group, one possible reason for this positive outlook of the context is that they have the opportunities to go into industries that were previously inaccessible to them. Furthermore, there are many government agencies and programmes geared to helping them on their entrepreneurial journey. In contrast, the more experienced European entrepreneur has a more negative outlook of the context. One possible reason is that they might be comparing the situation now to what happened in the past, and one major change for many entrepreneurs is

government policy, such as Black Economic Empowerment (BEE) and Affirmative Action (AA), which have been put in place to attempt to redress the past inequalities. However, the direct impact this has for many European entrepreneurs is that they cannot get access to government tenders or projects as preferential treatment will be given to the ethnic groups that were disadvantaged in the past. However, there seems to be some evidence that both Indian and European entrepreneurs are joining forces with African entrepreneurs in order to get access to these lucrative business opportunities, especially common in large construction projects, such as stadiums and infrastructure for the World Cup of 2010.

Conclusion and Recommendations

The most surprising result from the perceptions of the environment was that the African entrepreneurs perceived that they had to adjust to changes in rules and policies, as well as changes in suppliers and customers. One reason for this might be because they have not had the level of experience of both the Indian and European entrepreneur in business. Another problem they face is they seem more 'alone' than the Indian entrepreneur who has a very close network of family and community, and the European entrepreneur who is able to call on his family for support. However, in contrast, the African entrepreneur group are the most optimistic of the South African environment for entrepreneurship. Whether this is due to the perception that he feels that he is in the 'best position' to get finance, and contracts because of government legislation, such as Affirmative Action, or whether it is due to the excitement of being an entrepreneur is difficult to say, and needs further investigation.

The results of this study confirm similar research findings (Ahwireng-Obeng & Piaray, 1999; Co, 2004; Co & Mitchell, 2004) on South African entrepreneurs. Entrepreneurs from previous South African studies ranked the same top five obstacles as this study. This reinforces the fact that some obstacles encountered by entrepreneurs are universal and are unaffected by the context of each individual country. Furthermore, it is also interesting to note that in both the studies, most entrepreneurs perceived crime and theft, tax regulations and inflation as the main obstacles faced by entrepreneurs.

Drawing on the academic literature (North, 1991; Scott, 2008) on institutions and the view that they consist of cognitive, normative and regulative structures and activities that provide meaning, the normative and cognitive pillar of institutions is relevant to the position of the African entrepreneur in the South African context (Bruton et al., 2010; Kiss & Danis, 2008; Veciana & Urbano, 2008). One of the outcomes of the previous political system was the impact it has had on the value and belief system of the African population. Whole generations of people have lived in an environment where they were treated as 'third-class' citizens, with no political power, and the only aspect that they had in common with each other was their opposition to the Apartheid government. However, this 'common' enemy has now been removed, but the innate mind-set' is still there. Their self-confidence and ability to take the initiative and take risks has been affected.

Welter and Smallbone (2011) state that the unique institutional context influences the nature, pace of development, and extent of entrepreneurship as well as the way entrepreneurs behave. This is particularly apparent in challenging environments such as emerging markets and transition economies with an uncertain, ambiguous, and turbulent institutional framework. The results of this study show support for the argument that different entrepreneurs are able to react differently to the same set of conditions. This is referred to in the literature as the heterogeneity of entrepreneurial responses to institutional conditions, depending on the situational configuration of institutional fit, enterprise characteristics, and entrepreneur's background.

Implications for policy and practice

This study has several implications for practitioners and policy makers. Firstly, this study contributes to an understanding of ethnic entrepreneurship. The results of this research indicate the value of studying small businesses owned by a particular ethnic group and the importance of gaining greater understanding about ethnic entrepreneurship in South Africa. Secondly, this study will assist policy makers by providing a more thorough understanding of ethnic small businesses. The study indicates that different ethnic groups have different perceptions of the environment. To focus on the development of entrepreneurship, governments should continuously strive to be sensitive to the needs of entrepreneurs and ensure that the formal institutional environment (policies, programmes, support services, incentives) stimulates entrepreneurship. Thirdly, it is important to invest in building bridges between communities and social groups. For entrepreneurs to create new ventures or expand, they need to leave the confines of their own community and create new networks.

Although specifically related to the South African context, the following policy recommendations have relevance to other developing countries. To improve on the predictability of laws and policies, the government must stick to announced major policies. Entrepreneurs must also be consulted when changes in laws and policies are planned. Informing the entrepreneurs of changes in laws and policies is also critical. Negative perceptions of bureaucratic red tape can be improved when the culture of corruption by government officials is eradicated. This can be done by prosecuting culprits and by imposing heavy penalties on guilty individuals.

Limitations of the research

The interpretation of the results of the study is subject to several limitations. Firstly, the study was conducted in the city of Durban, in KwaZulu-Natal province of South Africa. Therefore, the sample was limited to only subjects who live in the vicinity of the city, and entrepreneurs from the other areas and rural areas were excluded. This therefore potentially limits the generalizability of results to the wider population as the sample may not be representative of the general entrepreneurial population. Secondly, the study focused on the entrepreneur's perception of the institutional environment. A potential limitation is that the research made use of a structured survey instrument, and therefore the types of responses tended to be fairly concise and detailed reasons for certain answers were not given.

Implications for future research

A deeper and broader understanding of entrepreneurship will be made if more studies on entrepreneurship are conducted in emerging economies. At present, most of the research on entrepreneurship comes from developed countries. The results of these studies are not always applicable to the developing world, because of differences in the contextual environment and informal institutional factors. In terms of methodology, the research could be approached by undertaking multi-method studies that combine the strengths of different methods. The quantitative research methods will then be guided by insights gleaned from the original qualitative research. In addition, it would be interesting to research how the entrepreneurial "landscape" has changed for each of the ethnic groups. The scope of the study could be made broader if respondents from the different parts of the country were included in the sample. Adding rural entrepreneurs as respondents could also provide a different insight in terms of possible differences in perceptions of the institutional context affecting entrepreneurship.

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Does Entrepreneurship Make You Wealthy? Insights from the British Wealth and Assets Survey

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Does Entrepreneurship Make You Wealthy? Insights from the British Wealth and Assets Survey

Abstract

While there is growing interest in entrepreneurial earnings, prior studies have typically focused on the incomes derived from business ownership, a highly problematic measure, prone to under-reporting, which fails to capture either the financial rewards of entrepreneurship or the economic well-being of entrepreneurs. Using a large-scale population survey, this study focuses on household wealth, the stock of economic resources in the form of accumulated personal assets. Results show that entrepreneurial households own disproportionately more wealth than other households, and that the household wealth of business owners with employees is greater than the household wealth of the self-employed with no employees. Attributing a causal relationship between entrepreneurship and household wealth is problematic; however, there are indications that entrepreneurship could be, to some extent responsible, for the higher levels of wealth observed.

1 Introduction

That entrepreneurship can lead to great personal wealth is demonstrated by the number of individual success stories reported in the popular media. In recent years, up to 80% of the *Forbes* List of the wealthiest Americans has comprised business owners, while most of the rest inherited their wealth, typically made from businesses started by their parents or grandparents (Cagetti and De Nardi, 2006). The UK's *Sunday Times* Rich List includes similarly high numbers of business owners and their immediate descendants (Shaw, Gordon, Harvey and MacLean, 2013). But it is also evident that not all entrepreneurs are successful or wealthy. Risk is a defining characteristic of entrepreneurship, leading to great variability in the fortunes of entrepreneurs. Despite this, surprisingly little is known about the extent to which entrepreneurship leads to personal wealth for individuals who have started businesses. While there has been a growing interest in entrepreneurial earnings, this has focused mainly on measuring the relative incomes of entrepreneurs, rather than overall wealth measured by the stock of personal assets which may prove a more accurate measure of entrepreneurial earnings.

This study presents the first attempt to assess the relative wealth of entrepreneurs, examining two key questions critical to the entrepreneurial earnings debate. Firstly, we examine the magnitude, composition and distribution of entrepreneurial wealth. Using the Wealth and Assets Survey (WAS), a longitudinal British population survey, as the main data source, we compare the wealth of two types of entrepreneurs, self-employed individuals with no employees (self-employed) and business owners with employees (employers), with remaining population groups. Secondly, building on prior studies that have found a “tight relationship between being an ‘entrepreneur’ and being rich” (Cagetti and De Nardi, 2006:838), we attempt to disentangle the extent to which household wealth is an outcome of entrepreneurship. In so doing, we provide a more nuanced understanding of the financial rewards of entrepreneurship, contributing new insights that move the field beyond the entrepreneurial incomes puzzle that has preoccupied scholars to date.

Following this introduction, the paper reviews the prior research that has contributed to our current understanding of entrepreneurial earnings, prior to describing the dataset and our analytical method. The results of our analysis are reported in two parts. The first reports the size, composition and distribution of wealth owned by entrepreneurs relative to that owned by others, and the second reports the causal relationship between wealth and entrepreneurship. Finally, we provide conclusions and suggestions for future research.

2 Entrepreneurial Earnings: Incomes and Wealth

There is growing research interest in entrepreneurial earnings and the financial rewards that may be derived from entrepreneurship. The main focus of investigation has been the incomes derived from self-employment and business ownership relative to those derived from employment (Shane, 2008). Studies of entrepreneurial incomes offer diverse results. Several early studies reported consistently lower earnings among the self-employed (Hamilton, 2000; Blanchflower, 2004; Shane, 2008) and posed the question that has become known as the entrepreneurial income puzzle; why so many individuals choose to remain in self-employment given the considerably higher earnings available to them in paid employment (Sorgner, Fritsch and Kritikos, 2014). More recent studies have started to address this puzzle by improving the methodological approach taken to studying entrepreneurial earnings. Astebro and Chen's (2014) study of US entrepreneurs argued that the widely reported low incomes derived from entrepreneurship were largely a function of the systematic under-reporting of earnings, while Sorgner, Fritsch and Kritikos's (2014) analysis of German micro-census data focused on unpacking the single, heterogeneous category of entrepreneurs into a number of different analytical groups. By controlling for measurement issues and disaggregating different types of entrepreneurial activities, these studies concluded that entrepreneurial earnings were often comparable, albeit with greater variability, to those gained in paid employment. As Sorgner et al (2014:21) report "the common assertion that self-employed persons tend to earn less than paid employees does not hold true. Despite considerable heterogeneity, many but not all self-employed earn more".

Although incomes are a useful measure of relative prosperity, particularly for those in paid employment whose earnings are typically their main or sole income source, the use of incomes as the main measure of the financial rewards of entrepreneurship is highly problematic. Economic well-being is a multi-dimensional construct, of which incomes constitute only one element (Carter, 2011). Entrepreneurs have considerable discretion in determining not only the type, but also the value and the timing of their personal financial rewards. Incomes in the form of drawings are only one type of financial reward that may be derived from business ownership. The financial rewards of entrepreneurship include both direct financial rewards (i.e. drawings, net profit, shareholder dividends and equity sale), and a range of indirect rewards, including goods and services owned by the firm but used for personal and household consumption. The extraction of financial rewards may be adjusted to suit prevailing business conditions and the entrepreneur's individual requirements. For example, frugal entrepreneurs may typically extract notional drawings, but the amount may vary depending on personal needs and the affordability to the business. Similarly, the value and timing of more substantial financial rewards, such as dividends and profit, may be varied by the judicious entrepreneur to suit prevailing business conditions and to maximize personal and business advantage. Arguably, the ability to vary the value, form and timing of financial rewards extracted from the business is a distinguishing feature of entrepreneurship. Hence, research that focuses only on incomes is unlikely to be sufficient to fully address the entrepreneurial earnings puzzle.

Income can be viewed as a flow of economic resources, comprising money received over a particular period of time. In contrast, wealth is a stock of economic resources in the form of accumulated personal assets (Rowlingson, 2012). As such, wealth constitutes a more stable and reliable measure of relative success and economic well-being over the life-course of the business and the individual entrepreneur. While the use of wealth as a measure of the financial rewards of entrepreneurship resolves many of the measurement and under-reporting issues commonly associated with studies of entrepreneurial incomes, it introduces other challenges and complexities. Most obviously, the distinction between income and wealth can be ambiguous as some assets provide a source of income (e.g. interest on savings), while income

flows may be converted into assets (e.g. saved income). Assets also vary greatly in liquidity and fungibility; while pension assets are typically illiquid, housing assets can be used to collateralise business debt and financial assets readily used for business purposes. Additionally, wealth can be negative; debt can be collateralised against the value of an asset to leverage funds for further investment (Rowlingson, 2012: 8). Finally and most problematically from a measurement perspective, the source of accumulated wealth may be misattributed to entrepreneurial success, but actually derived from other sources. While these issues present methodological challenges, there are obvious advantages in focusing on the accumulated stock of an individual's economic resources, rather than income flows, as a more reliable indicator of the financial rewards of entrepreneurship.

It is widely recognised that the distribution of wealth is highly unequal, and in most countries wealth distribution is more unequal than income distribution. On a global level, wealth share estimates show that the richest 1% of individuals account for 40% of global wealth, while the richest 10% account for 85% of global wealth (Davies et al, 2007). Those in the top decile are, on average, 400 times richer than the bottom 50% (Davies et al, 2007). In the UK, studies of wealth show that the most unequal type of wealth is financial wealth, followed by private pension wealth and property wealth (Rowlingson, 2013). The wealthiest individuals are typically in the 55-64 year age group, though considerable inequality exists within this age group, typically because older people have had more time to accumulate assets than younger people (Birmingham Policy Commission on the Distribution of Wealth, 2013). Large variations in wealth are also apparent by occupation, with entrepreneurs frequently found to be among the wealthiest (Quadrini, 2007; Cagetti and De Nardi, 2006).

Studies have shown that the concentration of wealth owned by entrepreneurs cannot be explained by their incomes, which are disproportionately lower (Quadrini, 2007). Instead, two alternative explanations of entrepreneurial wealth have been proposed. Firstly, there is evidence that the greater wealth of entrepreneurs is a result of different patterns of accumulation and higher levels of savings (Quadrini, 2000; Bradford, 2003; Cagetti and De Nardi, 2006). Entrepreneurs may have access to lump sum payment through shareholder dividends and also have a greater incentive to save, both because of their need to offset large earnings risks and also to reduce the requirement for external finance (Gentry and Hubbard, 2004; Parker et al, 2005). Secondly, there is evidence that the wealth of entrepreneurial households is not only an outcome of successful entrepreneurship it is also an input, providing capital facilitating business start-up and growth. Wealthy households have access to financial assets reducing borrowing constraints (Gentry and Hubbard, 2004; Nanda, 2008). In contrast, non-wealthy households may experience credit rationing constraining venture start-up and growth among those with a reliance on external finance (Stiglitz and Weiss, 1981; Levenson and Willard, 2000; Freel, 2007).

Sources of wealth are varied, but can be categorised as either earned through saved income or unearned through gifts or price effects such as growth in property or share prices (Rowlingson, 2013). *Prima facie*, the possession of wealth may appear self-evidently beneficial, but individual motivations for accumulating wealth are wide-ranging. For some individuals, the motivation to accumulate wealth may derive from a personal moral stance favouring thrift, frugality and saving, others build savings in order to smooth future consumption, while for others the possession of wealth reduces the need for external borrowing or provides collateral to securitise external credit (Birmingham Policy Commission on the Distribution of Wealth, 2013). Because wealth comprises a stock of different types of assets built over time, it provides a more durable resource to measure relative success and economic wellbeing over the life-course of the business and the individual entrepreneur than income, a fluid asset prone to rapid out-flows and under-reporting.

A key question relating to wealth is whether it should be measured at the level of the individual, the family or the household (Rowlingson, 2013). Studies have increasingly recognised the role of families and households in supporting business ventures and the extent of sharing within entrepreneurial households (Aldrich and Cliff, 2003; Alsos, Carter & Ljunggren, 2014). In this study we focus on the household, but recognise the additional complexity this entails, as the wealth observed within a household may not derive solely or mainly from the business, but may have accrued from other sources including, for example, spousal wealth (Mulholland, 1996; Carter, 2011). Following an examination of the size, composition and distribution of the relative wealth of entrepreneurs, we explore the extent to which household wealth is an outcome of entrepreneurship.

3 Data and methods

This study employs data drawn from Wave 2 of the Wealth and Assets Survey (WAS), a longitudinal general population survey conducted by the UK Office for National Statistics (ONS) that collects household and personal level data pertaining to wealth. Wave 1 was carried out between July 2006 and June 2008 and achieved a sample of 30,595 households and 71,268 individuals. The survey has a two yearly interval, such that Wave 2 commenced in July 2008 through June 2010. Wave 2 achieved a sample of 20,170 households (of which 18,910 can be linked to Wave 1) and 46,347 individuals. The present study considers variables at the household level; some, such as wealth, are only collected at the household level, others are aggregations of household members' responses, while others only pertain to the individual responses of the Household Reference Person (HRP). The HRP is defined as the person within a given household chosen to represent the household and characterise the household's social position using his/her individual characteristics with priority given to the individual with the highest income in the household (http://www.ons.gov.uk/ons/dcp171776_303450.pdf). We employ only Wave 2 data as certain key questions of relevance to the present study, such as the respondents family background, were introduced in Wave 2. Our variables of interest are household wealth (dependent variable) and entrepreneurial households (independent variable).

Households were divided into six categories based on the economic activity of the HRP: economically inactive, pensioners, unemployed, employees, self-employed with no employees and business owners with employees (employers). While pensioners, the economically inactive, and the unemployed are self-explanatory, the distinction between employees, self-employed and employers is crucial, especially with regard to notions of entrepreneurship and business-ownership. A person whose main current occupational status is captured in the dataset as sole director of own company, partner, self-employed or a director with ownership in a company with less than 500 employees was categorised as an entrepreneur. Company directors that have no ownership were categorised as employees, and employees with ownership are not captured in the data as the filtered question on proportion of ownership only targets directors. Entrepreneurs are therefore owner-managers, i.e. those that combine some degree of ownership and a strategic managerial position as director or partner. Within this broad category, the self-employed group captures those that merely employ themselves or themselves and fellow partners but no employees. In turn, employers are any owner-managers whose firms have employees. Importantly, where an individual is a business owner but such ownership does not entail a formal managerial capacity, such an individual is not captured in these occupational groups. Thus, the six categories are essentially employment status indicators.

In the descriptive analysis of household wealth, we use these six occupational categories for the whole sample of British households. In the regression analyses, however, entrepreneurial households are defined as those where the HRP is either self-employed or is an owner-manager of a business that has less than 500 employees (i.e. is an entrepreneur as defined above). This is primarily because there is an analytical need to observe entrepreneurial

households as a binary variable. Further, in the regression analysis, we consider a sub-sample of households with economically active working-age HRP. Conventionally, working-age includes individuals aged between 16 - 64 years (16 – 59 years for women); however, since data on family background was only sought from respondents that were at least 25 years old, we consider 25 years as the lower threshold for working-age HRP. A further subsample of working working-age HRP also eliminates households whose HRP are either inactive or unemployed. This is partly because data on certain factors are only collected from working respondents. Being primarily age-related, a working-age sub-population is rather straightforward. However, there may be selection bias issues with the working sub-sample should there be unobserved factors associated with both household wealth and not working. The wealth of the highly heterogeneous group of economically inactive may be especially problematic in this regard.

Besides selection, in seeking to establish whether entrepreneurship is causally associated with household wealth, there are three further main analytical concerns. The first two relate to negative wealth and the distribution of wealth. While most quantitative analyses employ the natural logarithm transformation to make skewed data more amenable to analysis and inference, wealth measures contain legitimate negative and zero values thereby making the log transformation unsuitable. Since wealth is not normally distributed in the population, researchers do not ordinarily employ means and mean-based linear methods to analyse wealth - medians and quantile regressions are deemed more suitable. Thus, non-positive wealth is often converted to a low positive figure (frequently one pecuniary unit, e.g. £1) and then logged. The support for this is that such transformation does not change the rankings of the pertinent observations and does not therefore distort the population median. Pence (2006) however contends that this not only misrepresents the population, since instances of negative wealth do exist in the population, but also underestimates the true median regression standard errors since variability in the data is reduced. Further, truncating the data at the value of one means that studies at lower quantiles of the response variable cannot be estimated, even when understanding the relationship between variables at the lower quantiles may be highly relevant as in this case. Following Burbidge *et al.* (1988) among others, Pence (2006) advances the use of the Inverse Hyperbolic Sine (IHS) as a transformation suitable for responses with negative values, such as wealth. Another option is the cube-root transformation (Cox, 2011).

The third issue pertains to the potentially endogenous relationship between entrepreneurship and wealth. It is well documented that entrepreneurial households tend to be richer (Cagetti and De Nardi, 2006; Carter, 2011); however, since wealthy households are more likely to become entrepreneurs, not least because wealth enables the supply of capital required for start-up, entrepreneurship is endogenous in wealth. Where interest focuses on whether entrepreneurship makes households wealthier an instrumental variable approach is therefore imperative. In prior studies of entrepreneurship, parental variables have been employed as instruments for the endogenous variables pertaining to the entrepreneur (Coad *et al.*, 2014; Dahl and Sorenson, 2012). This approach was also used in this analysis, as is explained below.

In view of these analytical considerations, the most appropriate approach to investigate whether entrepreneurship leads to higher wealth is an instrumental variable quantile regression with sample selection. Although Frölich and Melly (2010) have developed an Instrumental Variable Quantile Treatment Effects (IVQTE) module within STATA, an accurate implementation of such a strategy in the presence of sample selection is still challenging for three reasons. Firstly, the standard Heckman correction may not be appropriate in a quantile regression framework as its distributional assumptions are not consistent with the inherent heterogeneity that necessitates the quantile regression approach in the first place (Huber and Melly, 2011). Although advances have been made in this regard following (Buchinsky, 1998; 2001), this issue remains unsettled (Huber and Melly, 2011). Indeed, modules to estimate this

within STATA, the analytical software we employ in the present study, are yet to be developed and potentially relevant user-written codes caution that they are as yet computationally overlong and complicated (see for example, Souabni, 2013). For this reason, in the present first approximations, we do not correct for selection in the quantile regressions and instead caveat our results as applying only to the selected sub-populations.

The second issue concerns instruments for entrepreneurial HRPs. Extant empirical work supports the idea that children of entrepreneurs are highly likely to become entrepreneurs themselves (Colombier and Masclet, 2008; Davidsson and Honig, 2003; Dunn and Holtz-Eakin, 2000; Fairlie and Robb, 2007). Aldrich *et al.* (1998) have however argued that entrepreneurial parents may not always pass on entrepreneurial privilege to their children, which does not itself violate monotonicity. However, where entrepreneurship is considered simply as self-employment or mere business ownership with no (performance) qualifiers, “defiers” may be observed if children of entrepreneurs elect to pursue more prestigious and modern corporate careers because they are put off inheriting the family firm by the entailing toil and austerity, especially where the family firm is in a rather antiquated sector (see, for example, Anuradha, 2004; Parrilli, 2009). Nevertheless, with much of the evidence on the effect of parents supports monotonicity.

Frölich and Melly (2008; 2010) identify four key assumptions that an instrumental variable should satisfy. These include 1. compliance (some HRPs become entrepreneurs because their parents were themselves entrepreneurs); 2. monotonicity and non-defiance (although having parents that were entrepreneurs may not have the effect of making the respective HRPs pursue entrepreneurship, having entrepreneurial parents does not make certain HRPs seek employment instead); 3. exclusion and unconfoundedness (having entrepreneurial parents does not affect the HRPs household wealth directly or indirectly); and 4. independence (having entrepreneurial parents does not systematically influence the distribution of other HRP and household attributes).

Assumption 3 may be violated where entrepreneurial parents afford wealth to their children not just directly, but also through other factors such as inheritance or unobserved social capital. Here, however, the direct effect can be investigated empirically. Further, the indirect effects may be mitigated by controlling extensively for other factors, such as inheritance, which more or less randomise the instrument (Frölich and Melly, 2008). A random instrument also ensures that assumption 4 is satisfied. In any event, most of the other household and HRP attributes that may affect wealth are factors such as age, ethnicity, gender and family background. It is unlikely, therefore, that their distribution in the population is influenced by having entrepreneurial parents. In all, while it is widely appreciated that implementing instrumental variables is a challenge in empirical analysis (see for example, Bound *et al.*, 1995), this approach may help recover the causal effects of entrepreneurship on household wealth.

The third concern with the implementation of the IVQTE model in the present study is that we employ survey data but the IVQTE model does not as yet allow the estimations to be adjusted in line with the survey design. Thus, accounting for sample weights and clustered observations, and therefore standard errors, is not accommodated within IVQTE. Nevertheless, since our study investigates wealth over its distributional profile and we know that the WAS survey deliberately oversampled richer households, we expect that the sample median is higher than the population median and can thus qualify the inferences accordingly. Thus, although the point estimates and standard errors, and therefore what returns as statistically significant, may not be correctly estimated, the results are still informative given especially the large sample size. Bootstrapping with resampling within clusters enabled has been found to significantly improve the estimates of standard errors (see for example, Shih and Konrad, 2007), and was also implemented.

4 Analysis

4.1 The magnitude, composition and distribution of household wealth among occupational groups

As the weighted statistics in Table 1 below shows, in the period 2008/2010, there were almost 25 million households in Great Britain sharing among them a total of almost £11 trillion in household wealth.⁶⁸ The median British household had about £230,000 in household wealth. That the distribution of wealth is highly skewed is attested to by the magnitude of the difference between the mean and the median of total wealth. At about £414,000, the mean is more than 75% larger than the median. This suggests that while the majority of the population owns modest wealth, there are a few households with very high amounts of wealth who pull up the average. This trend is common among all occupational groups but is perhaps most marked in households in the inactive category, which includes, among others, people who cannot participate in the labour market because of illness or disability, persons looking after the family home and those that have taken early retirement (Leaker, 2009).

Between the various occupation groups on aggregate, Table 1 shows that entrepreneurial households own more wealth than representation in society would suggest. Although only 2% (about half a million) of households have HRPs who are owner-managers of small businesses with employees, collectively these households own 4% of total household wealth. Similarly, there are almost 1.5 million self-employed HRPs in the UK accounting for 6% of households; however, this group owns 7% of total household wealth. Between them, these two groups, while comprising only 8% of households, own 15% of household property wealthy (the sum of all property values minus the value of all outstanding mortgages and amounts owed as a result of equity release), 13% of net financial wealth (formal and informal financial assets less non-mortgage debt), and 12% of physical wealth (including household contents, collectibles and valuables, and motor vehicles). In particular, entrepreneurial households own 15% of the values of all household motor vehicles and almost 30% of all household valuables and collectibles.

⁶⁸ Wealth is inflated to 2012 calendar year prices using UK GDP deflators obtained from <https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-march-2013>.

Table 1: The Magnitude and Distribution of Occupational Categories of British Households and Their Wealth By HRP

HRP occupational category	No. of households ('000)	% Share	British household wealth (2008/10) in £ Millions in 2012 prices													
			Household wealth	% Share	Property wealth	% Share	Physical wealth	% Share	Financial wealth	% Share	Collectibles	% Share	Motor vehicle	% Share	Pensions	% Share
Inactive	2,800	11%	976,000	9%	245,000	7%	85,800	8%	125,000	11%	3,960	10%	11,200	7%	520,000	10%
Pensioners	6,500	26%	2,860,000	26%	1,110,000	31%	264,000	24%	369,000	32%	10,000	24%	25,100	16%	1,120,000	22%
Unemployed	630	3%	83,100	1%	28,700	1%	14,400	1%	5,400	0%	477	1%	1,340	1%	34,600	1%
Employees	13,000	52%	5,790,000	53%	1,690,000	47%	584,000	54%	503,000	43%	15,000	36%	97,100	61%	3,010,000	59%
Selfemployed	1,500	6%	820,000	7%	325,000	9%	86,800	8%	95,800	8%	7,450	18%	14,900	9%	313,000	6%
Employers	520	2%	433,000	4%	208,000	6%	45,200	4%	61,500	5%	4,450	11%	9,350	6%	118,000	2%
	24,950	100%	10,962,100	100%	3,606,700	100%	1,080,200	100%	1,159,700	100%	41,337	100%	158,990	100%	5,115,600	100%

Table 2: Mean and Median Household Wealth by the Occupational Category of the HRP

HRP occupational category	Total household wealth		Property wealth		Physical wealth		Net Financial wealth		Pension wealth		Motor vehicle wealth		Total financial liabilities		Property liabilities	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Employment status																
Inactive	331,460	36,809	82,963	0	29,004	16,000	42,718	200	176,775	0	3,803	500	2,445	120	9,529	0
Pensioners	413,181	264,663	159,608	139,999	38,156	30,000	53,202	13,105	162,215	48,645	3,623	1,000	731	0	3,656	0
Unemployed	123,585	26,893	42,611	0	21,484	15,000	8,034	-141	51,455	0	2,005	0	3,457	464	15,089	0
Employees	420,685	246,870	123,026	80,000	42,511	35,500	36,369	5,715	218,780	77,006	7,060	4,000	5,397	960	59,158	29,500
Selfemployed	508,115	287,250	200,369	128,000	54,085	41,000	59,806	9,850	193,855	38,921	9,276	6,000	5,445	458	66,078	22,000
Employers	774,283	475,700	371,882	213,563	80,093	59,000	110,362	33,606	211,946	72,738	16,508	9,750	6,591	400	131,511	73,000
Total Sample	413,825	232,380	136,048	89,999	40,798	32,500	43,776	6,400	193,552	52,469	5,990	3,000	3,812	40	39,741	0

Figure 1 shows the distribution of the different household occupational groups within the different wealth deciles. While the share of self-employed households is not markedly different across the different deciles of wealth, households comprising business owners with employees (employers) do not feature in the lower deciles and their representation is greater in the upper wealth deciles. Figure 2 illustrates this further. Within the totality of employer households, more than 20% are found within the top decile of wealth, with very low representation in lower deciles of household wealth. Indeed, more than 50% of employers are within the three highest deciles and there is virtually no representation in the lowest three deciles, suggesting a strong positive relationship between employing entrepreneurs and household wealth. In contrast, self-employed and employee households are fairly evenly distributed across the wealth spectrum, while more than half of households with an unemployed HRP are to be found in the lowest two deciles. While it is curious that more than 10% of households where the HRP is categorised as economically inactive belong in the wealthiest decile in society, this may be explained by early retirement by rich individuals, or the financial contributions by other household members.

Figure 1: The representation of various occupational groups in different wealth deciles

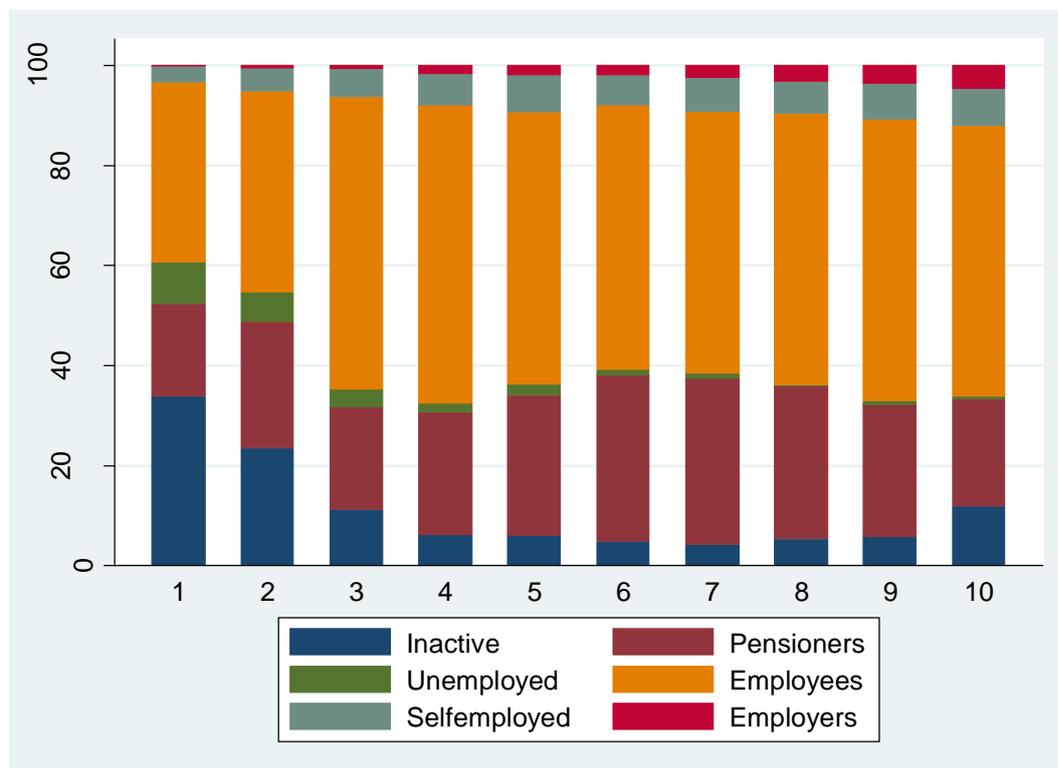
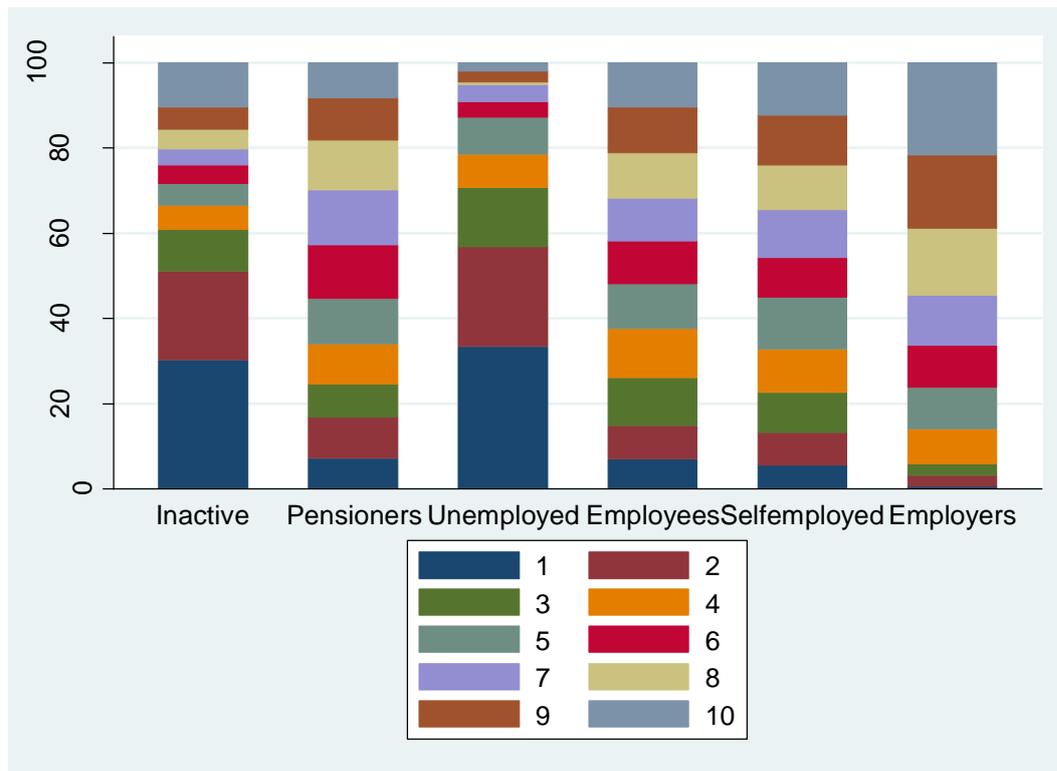


Figure 2: The distribution of wealthiness within different economic groups



While prior research suggests that entrepreneurs may be particularly prone to financial risk in their old age (D’Arcy and Gardiner, 2014), our estimates suggest that as a group, entrepreneurial households account for 8% of total pension wealth which is proportionate with the incidence of entrepreneurial households in the population. While individual entrepreneurs may not themselves save towards their pensions, it would appear that (other members of) their households do. However, while the median employee household has about £77,000 (mean £220,000) in pension savings and the business owner household has about £73,000 (mean £210,000), the median self-employed household has accumulated only about half as much pension wealth (£38,000, mean £190,000). While self-employed households may not be significantly worse off in terms of pension savings on average, there is high variability in pension saving behaviour and amounts among the self-employed which may leave many at the risk of financial insecurity later in life.

Nevertheless, with significantly higher levels of wealth overall, especially property wealth, it may be the case that for provident entrepreneurs, besides formal pension schemes, investing in property and other wealth forms may also constitute a pension or a generally more diversified and versatile wealth portfolio. As Table 3 shows, not only do entrepreneurial households hold significant portions of their wealth in property while employees have more of their wealth in pensions, entrepreneurial households also have higher property liabilities. This suggests expensive homes, ownership of multiple properties (e.g. buy to lets), re-mortgaging to raise capital, or the use of household property as business collateral. With higher financial wealth, physical wealth and property wealth, entrepreneurial households that are frequently argued to be ‘income poor’ (see, Carter, 2011, for a review), can instead be seen to hold a variety of assets that can be used to supplement household budgets in the short, medium and long-term. While it is clear that employers constitute the wealthiest of all the occupational categories, descriptive analysis cannot determine whether the wealth observed among business owners is a consequence or an antecedent of their entrepreneurial activities and whether the munificence of entrepreneurship holds across the distribution of wealth.

Table 3: The composition of household wealth

As a share of total household wealth.... (mean/ median of household shares)														
Socio-econ group	Property wealth		Physical wealth		Net Financial wealth		Pension wealth		Motor vehicle wealth		Total financial liabilities		Property liabilities	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Inactive	14%	0%	72%	42%	-11%	1%	25%	0%	3%	0%	21%	0%	5%	0%
Pensioners	36%	39%	25%	12%	12%	7%	27%	22%	1%	0%	0%	0%	2%	0%
Unemployed	14%	0%	100%	67%	-36%	0%	22%	0%	4%	0%	47%	2%	18%	0%
Employees	27%	26%	30%	14%	4%	3%	39%	38%	5%	2%	6%	0%	45%	6%
Selfemployed	39%	41%	25%	15%	11%	5%	24%	16%	4%	2%	0%	0%	16%	5%
Employers	45%	47%	18%	12%	13%	6%	24%	19%	4%	2%	1%	0%	37%	16%
Total Sample	29%	27%	35%	14%	4%	4%	32%	27%	4%	1%	7%	0%	27%	0%

4.2 Regression analysis

Towards investigating the causal effect of entrepreneurship on household wealth, the primary specification for the present study is:

$$HWealth_i = \alpha + \beta \cdot Entrepreneur_i + \lambda \cdot X_i + \varepsilon_i \tag{1}$$

$HWealth_i$ is total household wealth owned by household i measured in 2012 GB Pounds divided by ten thousand (£'0,000s) and transformed accordingly. $Entrepreneur_i$ is a dummy variable equal to one if the household reference person is an entrepreneur (either self-employed or owner-manager with employees) and zero otherwise indicating whether household i is an entrepreneurial household. The vector X_i includes other observable determinants of household wealth and ε_i is the error term with assumptions corresponding to the pertinent specification. HRP characteristics included in X_i are: age, gender, education, industry, health (whether they have a long-term illness or disability), ethnicity, country of birth, religion and whether they or their partner have ever received an inheritance or a lump-sum payment from gambling, redundancy, insurance, compensation claim payments or money gifts in excess of £1000. HRP's family background factors include whether their father or mother was an entrepreneur, father's and mother's education, number of siblings, and their family's tenure of accommodation when the HRP was a young teenager. Other household factors such as type of household, education of other householders, total number of working householders, and whether there are cases of long-term illness in the household are also controlled for, as are broader contextual factors including region, whether rural/urban and calendar year. Descriptive statistics are presented in Table A1 in Appendix 1.

As a starting point, we sought to explore the linear relationship between entrepreneurship and household wealth (using the inverse hyperbolic sine, the natural logarithm and the cube root of wealth) using the standard OLS estimator. The results are presented in Tables A2-A4. In these estimations, standard OLS assumptions pertaining to the mean and distribution of residuals were not supported. This means that assuming the models were correctly specified and the employed transformations effectively mitigated the skewness in wealth data, a linear relationship between the identified variables and wealth cannot be fitted accurately and therefore that other techniques should be more appropriate.

This notwithstanding, the results should yet be informative. In Tables A2-A4, Model (1) shows the results unweighted, Model (2) incorporates sample weights but no clusters, Model (3) accounts for both sample weights and clusters, and Model (4) clusters standard errors but does not weight the data. Model (5) uses both sample weights and clusters and corrects for selection of working HRP households in the wealth estimations. All else equal, there is no evidence that entrepreneurial households are richer. Further, the models show the differences in the point estimates, standard errors and statistical significance across the different models. In particular, with sample weights considered, there is evidence of selectivity (Chi-sq= 321.70, *p-value*= 0.000) and most coefficients in the wealth equation are indeed noticeably different once the selectivity is accounted for. This suggests that unobserved factors associated with being in the working working-age group are also in part responsible for some of the variability in wealth and that for those selected, these unobserved effects will bias the estimated coefficients.

A further important assumption that is potentially violated is that of exogeneity, since, as already argued, entrepreneurship may be endogenous in wealth. To be able to implement a treatment effects model towards recovering elements of entrepreneurial households that are not correlated with household wealth residuals, we run a first stage regression to establish that our instruments are appropriate. OLS linear probability regression results shown in Table 4 indicate a strong correlation between HRP's father's entrepreneurial status and the HRP's own entrepreneurial status, and a strong F-statistic. This is especially the case when HRP's mother's entrepreneurial status is dropped, confirming the aggravating influence of additional weak instruments (Bound *et al.*, 1995). Column 3 shows that the instrument is stronger for the sample, i.e. with data unweighted. Further support for the validity of the instrument is that in the OLS results reported in tables A2-A4, HRP's father's entrepreneurial status was not found to have a significant direct relationship with the HRP's household wealth. While the exclusion restriction may yet be violated should HRP's father's entrepreneurial status have an indirect impact on HRP's wealth via inheritance (which includes of business), this risk may be mitigated by the fact that the inheritance variable also captures inheritance received by the HRP's partner. This reduces the effect of inheritance originating from HRP's with entrepreneurial fathers. Further, number of siblings may also capture other inheritance effects thereby reducing the confoundedness of the instrument.

Table 4: Instrument validity test

VARIABLES	Dependent variable: HRP entrepreneur (0/1)		
	(1)	(2)	(3)
HRP father entrepreneur (0 = otherwise)	0.088*** (0.014)	0.089*** (0.014)	0.108*** (0.011)
HRP mother entrepreneur (0 = otherwise)	0.010 (0.021)		
F Stat	21.76	43.46	100.08
Prob > F	(0.000)	(0.000)	(0.000)
R-squared	0.008	0.008	0.010
Observations	10,043	10,043	10,043

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Estimates of average treatment effects however suggest that while the instrument is arguably suitable, the hypothesis that no correlation is present between residual determinants of household wealth and residual determinants of entrepreneurship cannot be rejected. Estimates presented in Table A5 suggest that on average, there are, in the present specification, no veritable effects of entrepreneurship on household wealth. While it may be the case that our instrument is unable to recover true treatment effects, in considering the sub-population of working working-age HRPs, the treatment is subject to selection bias. Since a two-step Heckman correction procedure is not supported with complex survey data, an attempt to control for both selectivity and endogeneity is carried out manually in a compromise strategy that analyses the data unweighted and thereby overlooks the survey design. In the first stage, to correct for self-selection of HRPs into the working working-age group, a selection equation is estimated manually and the lambda term (the inverse Mills ratio) included in the endogenous binary-treatment regression. The resulting Heckman selection correction term in the first stage is not significant suggesting that while the unweighted data may not accurately representative of the population, since the Wealth & Assets Survey oversamples wealthier households, the subpopulation of working working-age HRPs is not itself systematically undermined by selection bias. Hence, the endogenous treatment estimates are carried out directly. In all the three estimates of wealth, the respective likelihood ratio tests indicate that the hypothesis of independence between unobserved factors associated with both wealth and entrepreneurship is rejected and the use of the specified endogenous treatment supported (IHS: Chi-sq=5.23; *p-value*=0.02; Log wealth for positive values: Chi-sq=7.26; *p-value*= 0.007; Curt wealth: Chi-sq=3.316; *p-value*= 0.06). As Table 5 below shows, it is estimated that on average, entrepreneurship increases household wealth by 22-26%. The log transformed estimate is higher at around 32% but this only considered households with positive wealth.

Coefficients for IHS transformed data approximate the log at large values (in the present case above 3 units of wealth, i.e. £30,000) and can therefore be interpreted in percentages. At lower values, the IHS approximates a linear (levels) estimation. The extent to which the IHS transformation is linear or logarithmic is determined by the scaling parameter θ (Pence, 2006). In the present work, we have not applied a scaling parameter (thus $\theta=1$). While differences between the IHS and log are quite large at low figures (i.e. those around zero), the IHS is largely only a vertical displacement of the log (i.e., $\ln 2\theta + \ln w$, (Pence, 2006)) at higher values. Since the point at which IHS and log become similar is below the 10th percentile of the overall sample (even lower for the working working-age subsample), to avoid further transformation of the original data and for ease of analysis and interpretation, a scaling parameter is not employed.

For the cuberoot transformation, the coefficients pertain to the marginal effect estimated at the mean of the cuberoot of wealth. To obtain a result that refers to the original distribution, we apply the marginal effect at the mean of the cuberoot and then cube both the mean cuberoot and result after adding the marginal effect to establish the additive (percentage) effect at the raw wealth level. In the estimates above, the mean of the cuberoot of wealth = 3.2 and estimated marginal effect = 0.216 which results in 3.416. The cube of mean of cuberoot=32.768 (i.e. £327,680) and the cube of the result after applying the marginal effect=39.862. The multiplicative effect=1.216 which is equivalent to a 22% increase in mean wealth.

As with other transformations, note that the cube of the mean of the cuberoot of wealth does not correspond with the untransformed sample mean (which is £577,425 for the working working-age sub-sample). Further, unlike the logarithm that changes the nature of the data such that coefficients are interpreted as percentages, since it is merely a root of the raw data coefficients pertaining to the cuberoot of wealth should be interpreted as absolute changes. Thus, on average, entrepreneurship adds 0.216 (i.e. £2,160) to the cuberoot of household wealth. The 22% increase therefore only applies at the cube of the mean of the cuberoot of

wealth; percentage increases will vary at different values of wealth. Since the cuberoot results are similar to the IHS and log transformed results we focus especially on the IHS transformed results.

Table 5: Local average treatment effects

Dependent variable = Total household wealth; Endogenous variable = Entrepreneurial household (i.e. HRP is an entrepreneur)						
VARIABLES	(1) IHS Wealth	(2) Entr'l Hhold	(3) Log Wealth	(4) Entr'l Hhold	(5) Cuberoot Wealth	(6) Entr'l Hhold
Entrepreneurial household (0 = otherwise)	0.235** (0.105)		0.282*** (0.102)		0.216* (0.113)	
HRP father entrepreneur (0 = otherwise)		0.313*** (0.050)		0.316*** (0.051)		0.315*** (0.050)
HRP age (yrs)	0.213*** (0.011)	0.037** (0.018)	0.202*** (0.014)	0.033* (0.018)	0.170*** (0.011)	0.037** (0.018)
HRP age squared	-0.002*** (0.000)	-0.000 (0.000)	-0.002*** (0.000)	-0.000 (0.000)	-0.001*** (0.000)	-0.000 (0.000)
HRP Female (0 = Male)	-0.123*** (0.028)	-0.334*** (0.050)	-0.111*** (0.031)	-0.335*** (0.050)	-0.129*** (0.029)	-0.335*** (0.050)
HRP Qualification; 0=No Quals						
HRP other qualifications	0.356*** (0.045)	-0.135* (0.069)	0.385*** (0.059)	-0.128* (0.069)	0.318*** (0.046)	-0.132* (0.069)
HRP Degree qualifications	0.859*** (0.049)	-0.185** (0.077)	0.886*** (0.071)	-0.175** (0.077)	0.904*** (0.051)	-0.181** (0.077)
Observations	9,064	9,064	8,973	8,973	9,064	9,064
Model p-value	0.000	0.000	0.000	0.000	0.000	0.000

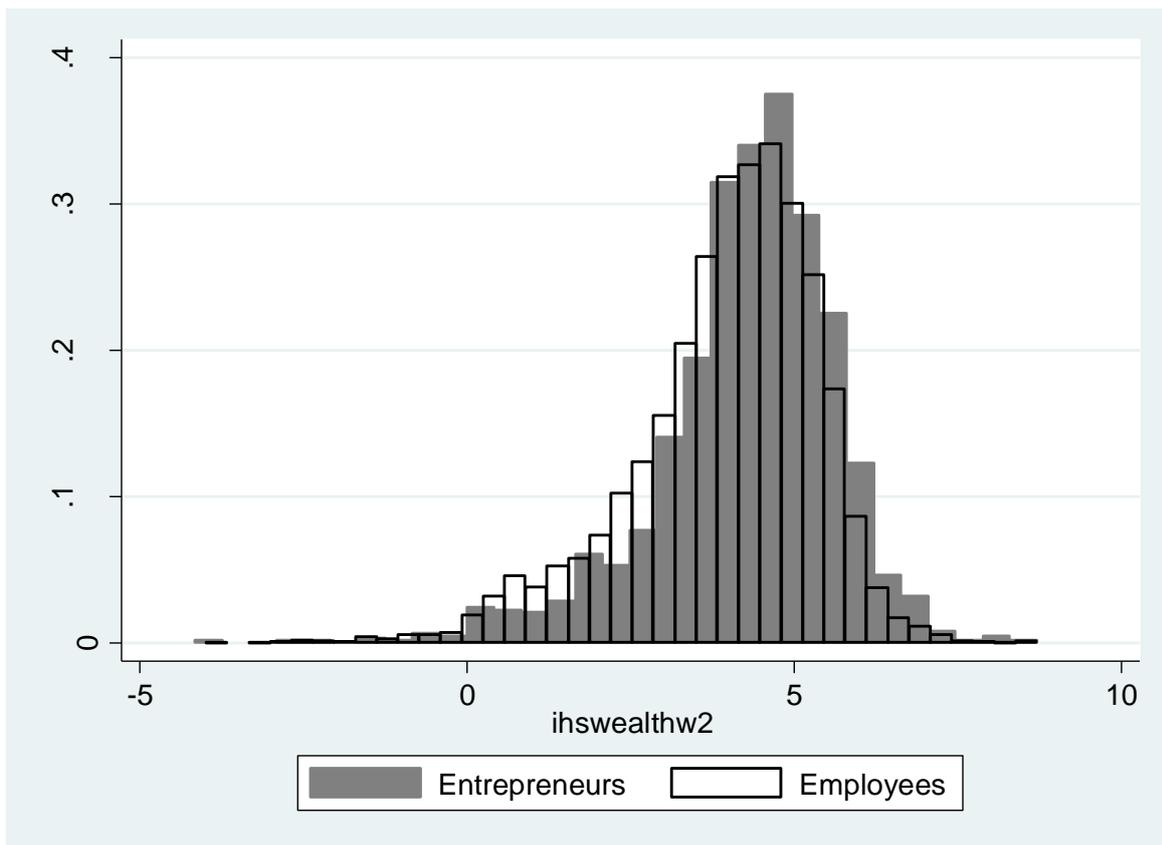
Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; Other personal, family background, present household and contextual factors included in the regression. Full results in Table A5.

4.2.1 Conditional quantile regression analysis

The foregoing results notwithstanding, the present study more readily lends itself to a quantile regression estimation strategy. This is because with wealth being highly skewed, the distribution of errors may not meet the assumptions stipulated for standard linear regressions. In addition, understanding the various effects at various points along the distribution of household wealth in society may be more informative. For a binary variable such as whether households' HRP are entrepreneurs or employees, the difference in wealth *prima facie* associated with their occupational status corresponds to the horizontal distance between the given quantiles in the corresponding distributions.

Figure 3 below shows that although both distributions are skewed, in spite of IHS transformation, the distribution of the wealth of entrepreneurial households is more broadly dispersed but with relatively fewer households in the lower rankings of wealth and entrepreneurial households are slightly more represented at higher levels of wealth. While no marked differences in the distributions are apparent, a significant horizontal gap may exist between given quantiles of the two distributions and therefore a significant difference in the wealth of the households at such quantiles.

Figure 3: The distribution of household wealth by entrepreneurial status



Nevertheless, the illustrated distribution only pertains to sampled households and may therefore not be representative of the population as is. Further, wealth is a result of many factors such that entrepreneurship may yet emerge as important once the effect of other correlates of wealth is accounted for. Quantile regressions allow for such effects to be investigated. However, although it is possible to incorporate sample weights in quantile regression using STATA, the clustered sampling design that characterises our data may not be accounted for. Thus, weighted quantile regressions may have point estimates that more or less correctly approximate the population,⁶⁹ but have incorrect standard errors and therefore erroneously return certain effects as significant.

At the same time, while it is possible to estimate more robust standard errors by employing cluster bootstrapping, this option is not allowed alongside weights. More correct standard errors may therefore be obtained at the expense of biased point estimates. To evaluate the differences, we compared the weighted results with unweighted results including those that employed clustered bootstrapping with 50 replications and 1000 replications. As Table A6 shows, although there are minor differences in the point estimates for the median regression, correcting standard errors through clustered bootstrapping did not afford notable gains in precision. Furthermore, the clustered bootstrapping could not be implemented consistently across all quantiles. This is perhaps because in the random resampling with replacement that bootstrapping undertakes, certain clusters, which correspond to postcode sectors and postcodes

⁶⁹ While the point estimates may yet be biased since missing data and the exclusion of certain observations will distort how well the weights approximate the population or indeed the sub-population, if missing at random, the remaining observations may still be more balanced than a sample that over-represents wealthier households by design.

are heavily associated with wealth, could not be included in the analysis at upper or lower quantiles of wealth if no observations within those clusters could be included.

Table A7 presents estimates of the weighted and unweighted coefficients of the different correlates of household wealth at different quantiles of wealth. In general, older HRPs are wealthier but the age effect is progressively lower at higher quantiles of wealth. Female HRP households are also found to generally have lower wealth compared to male HRPs although no effect is detected at the 1st and 99th percentile. Having a degree as opposed to no qualifications has a highly significant effect across the entire distribution of wealth albeit slightly lower at higher echelons of wealth. When it comes to industry, it generally does not matter which sector the HRP works in for both the poorest and richest households. However, HRPs in the hospitality sector are relatively poorer compared to those in agriculture, while those in ICT, finance and public administration, education and health appear to be comparatively better off especially between the median level and the 90th percentile. The health of the HRP is also estimated to be an important determinant of household wealth. HRPs suffering from a long-term illness are generally associated with lower household wealth compared to those who have never had a long-term illness with effects greater as one approaches both tails. However, for those that previously had a long-term illness but have since recovered, there are generally no significant wealth differences across the different quantiles.

The results also suggest some interesting ethnicity and immigration effects in household wealth. Compared to White British HRPs, White other, Black African, Other Asian and mixed-race HRPs are generally worse off especially between the 10th and the 75th percentile. With the White other and Black Africans, there is perhaps a story of recent migrants not having established themselves in the UK enough to accumulate wealth at comparable rates. There may also be effects related to immigrant households remitting money back to their countries of origin (Dustmann and Mestres, 2010) and perhaps also the “permanence of temporary migration” (Tsuda, 1999) where immigrant households expecting to go back home “one day soon” do not take up mortgages, for example. Country of origin itself is an important correlate of household wealth. Estimates suggest that although the effect is progressively lower with higher wealth, non-British HRPs born in other Anglo-Saxon countries are generally richer than the British. In contrast, HRPs born elsewhere in Europe, commonwealth countries or the rest of the world are generally poorer than their British counterparts. Further ethnicity and cultural effects are also captured by religion. While differences between practising Christian and non-practising Christian, Muslim, Jewish and Hindu/Sikh households are largely insignificant, evidence suggests that households that practice Buddhism, other religions or profess no religion at all have significantly lower wealth than practising Christians at the lower to upper middle wealth rankings.

Having received lump-sums in the form of money gifts, redundancy, insurance or compensation claims payments, or gambling windfalls is also a significant factor. As one would expect, receiving inheritance is strongly associated with higher household wealth. However, inheritance is not significant at the 99th percentile suggesting that for the very wealthy in society, the estate of their deceased kin is relatively inconsequential. Besides property, money and other physical goods, it would appear that non-material (e.g. cultural) inheritance matters too. From the median level upwards, the educational qualifications of the HRP’s father have a very strong relationship with household wealth. More importantly, however, across the whole wealth spectrum, HRPs that did not have a father or step-father growing up have significantly less wealth than HRPs whose (step)father was university educated. Curiously, mother’s education is only statistically significant at the lower echelons of household wealth and largely affects HRPs who had no mother growing up. Other significant family background variables include number of siblings, and the tenure of accommodation the HRP’s family had when the HRP was an adolescent. HRPs who come from a lone child background are found to be richer

at all quantiles of wealth, especially as compared to HRPs with 5-9 siblings. HRPs whose family were renting their home, or lived in free housing, foster homes, institutional or other accommodation as opposed to own homes are relatively poorer.

Present household characteristics are also significant correlates of household wealth. In particular, compared to single households, lone parent are less wealthy while couples (with and without children) and multiple occupancy households richer. Indeed, having multiple persons in work is strongly associated with wealth, albeit up to the 75th percentile. By the same token, the health of other householders is a significant determinant of household wealth. Households with at least one person suffering a long-term illness are generally less wealthy with greater effects on the wealth of poorer households. Nevertheless, additional non-HRP human capital, measured as total number of years of schooling of other householders, is not significant except at the 95th percentile.

In terms of the broader context of the household, our estimates suggest that rural households are generally richer than urban households, all else equal. Some significant regional effects were also detected with households in London and the South East significantly richer than those in Scotland and a progressively growing divergence observed. Weighted estimates however suggest that households at the 1st percentile in the East of England, East Midlands and the North West have less wealth than their Scottish peers. Our estimates also indicate that British households sustained modest losses in wealth in 2009 and 2010 compared to 2008 due to certain year specific factors.

With the above HRP, household and contextual factors accounted for, conditional quantile regressions suggest that the effect of entrepreneurship on household wealth is highly heterogeneous with varying impacts at different parts of the wealth distribution. As Table 6 below shows, assuming that the 1st percentile of wealth conditional on the afore discussed covariates corresponds to the unconditional one, the weighted quantile regression estimates the marginal effect of entrepreneurship to household wealth is a reduction of about £3,000. In contrast, at the 90th percentile, entrepreneurship is estimated to increase household wealth by around 7%.⁷⁰

Recall, however, that entrepreneurship is likely endogenous in household wealth which means that the estimated effects are potentially biased. Conversely, the entrepreneurial status of the HRP's parents is arguably exogenous. Further, having controlled for inheritance, which includes the inheritance of a business, the entrepreneurial status of the HRPs' parents should not impact household wealth. Weighted estimates yet indicate that at the 1st percentile, households whose HRP's father was an entrepreneur are about £5,000 poorer. At the opposite end, having had entrepreneurial parents adds 17% to household wealth at the 95th percentile and 35% at the 99th percentile of the wealth distribution. Since the survey question on inheritance captures only those who have received more than £1,000 worth, it is likely that HRPs at the 1st percentile whose fathers were entrepreneurs inherited debt or bad assets (that may or may not be directly associated with their fathers' business) even where the HRPs themselves did not take over the business in question. In fact, only 21% of economically active working-age HRPs whose fathers were entrepreneurs became entrepreneurs themselves, whether by inheriting the respective family business or starting their own, and this group comprises only 20% of all entrepreneurial households.

For richer households with entrepreneurial fathers, but themselves not necessarily entrepreneurs, having shares in their (even still alive) fathers' businesses will leave these HRPs merely as shareholders without a senior managerial (directorship) role in such businesses.

⁷⁰ Recall that with our IHS transformed data, estimated coefficients are approximately linear at low levels and approximately logarithmic at higher levels (Pence, 2006). Thus, with an assumed 1st percentile value of around £0, the estimated marginal effect is -.323 which corresponds to £3230.

These shares may however be highly valuable, but they may not count as lump-sum gifts since only goods and cash gifts received in the two years preceding the survey were observed. Still, it may be the case that the rich children of entrepreneurs acquired certain behaviours and attitudes, such as saving, even where they themselves pursued employment. Notice, further, that these effects are only observed in the weighted estimates that may more or less approximate the effects at the level of the sub-population of working households.

Table 6: Quantile regression estimates (IHS wealth)

VARIABLES	1 st Percentile		10 th Percentile		25 th Percentile		Median		75 th Percentile		90 th Percentile		95 th Percentile		99 th Percentile	
	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
Entrepreneurial household (0 = otherwise)	-0.323**	-0.414	-0.086	-0.054	0.020	0.020	-0.033	0.005	-0.028	0.028	0.069***	0.089**	0.073*	0.081	0.129*	0.183
HRP father entrepreneur (0 = otherwise)	-	-0.552	0.027	0.028	-0.008	0.048	-0.014	0.015	0.015	0.003	0.062	0.063	0.157**	0.119**	0.299***	0.141
HRP mother entrepreneur (0 = otherwise)	0.537***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HRP age (yrs)	(0.189)	(0.339)	(0.059)	(0.075)	(0.048)	(0.050)	(0.033)	(0.035)	(0.032)	(0.036)	(0.038)	(0.040)	(0.064)	(0.060)	(0.082)	(0.122)
HRP age squared	-0.605*	0.636	0.056	0.067	0.081	0.015	0.122	0.071	0.137***	0.111*	0.037	0.127**	0.108	0.126	0.111	0.307
	(0.325)	(0.532)	(0.083)	(0.117)	(0.072)	(0.079)	(0.080)	(0.055)	(0.049)	(0.057)	(0.038)	(0.063)	(0.110)	(0.094)	(0.236)	(0.192)
	0.329***	0.292***	0.213***	0.227***	0.208***	0.223***	0.210***	0.214***	0.230***	0.223***	0.211***	0.194***	0.183***	0.180***	0.135***	0.180***
	(0.051)	(0.104)	(0.017)	(0.023)	(0.014)	(0.015)	(0.010)	(0.011)	(0.008)	(0.011)	(0.008)	(0.012)	(0.013)	(0.018)	(0.027)	(0.037)
	-	-0.002*	-	-0.002***	-	-0.002***	-	-0.002***	-	-0.002***	-	-0.001***	-	-0.001***	-	-0.001***
	0.003***	-	0.002***	-	0.002***	-	0.002***	-	0.002***	-	0.002***	-	0.001***	-	0.001***	-
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HRP Female (0 = Male)	-0.196	-0.232	-	-0.290***	-	-0.135***	-	-0.116***	-	-0.110***	-	-0.110***	-	-0.106**	-0.007	-0.073
	(0.134)	(0.269)	0.289***	-	0.141***	-	0.115***	-	0.116***	-	0.147***	-	0.127***	-	0.088	0.097
			(0.041)	(0.059)	(0.038)	(0.040)	(0.027)	(0.028)	(0.022)	(0.029)	(0.019)	(0.032)	(0.031)	(0.048)	(0.088)	(0.097)
HRP Qualification; 0=No Quals																
HRP other qualifications	0.313	0.411	0.300***	0.439***	0.368***	0.497***	0.296***	0.322***	0.264***	0.283***	0.180***	0.233***	0.203***	0.252***	-0.164	-0.267*
	(0.231)	(0.433)	(0.100)	(0.095)	(0.074)	(0.064)	(0.047)	(0.045)	(0.049)	(0.047)	(0.043)	(0.052)	(0.041)	(0.077)	(0.186)	(0.156)
HRP Degree qualifications	1.195***	1.301***	0.914***	1.047***	0.902***	1.052***	0.733***	0.776***	0.653***	0.674***	0.549***	0.620***	0.611***	0.654***	0.413**	0.218
	(0.263)	(0.477)	(0.105)	(0.105)	(0.078)	(0.071)	(0.050)	(0.049)	(0.051)	(0.051)	(0.044)	(0.057)	(0.050)	(0.084)	(0.198)	(0.172)
Observations	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Other HRP and household characteristics, family back ground, and other contextual factors included in the analysis. See Table A7 for the full set of results.

4.2.2 Unconditional quantile regression analysis

A key shortcoming of the standard quantile regression method is that the estimated effect at a given quantile pertains to an analysis of a distribution that is conditional on the included covariates, i.e. assuming the covariates take given values. Crucially, while the conditioning is crucial in the more analytical understanding of the various effects, the (residual) distributions upon which the quantile analysis is undertaken will often not correspond to the unconditional distribution observed in the data. This makes the interpretation of the quantile regression coefficients in a way that is relevant for policy and practice very difficult (Firpo, 2007; Firpo *et al.*, 2009). Firpo (2007) therefore proposed an unconditional quantile treatment effects estimator where the estimated coefficients pertain to the quantiles observed in the data. In the algorithm introduced by Frölich and Melly (2010) as a STATA command, to increase the efficiency of the model, covariates are included in a first stage estimation and then integrated out such that the resulting coefficients are not conditional on the included covariates.

Assuming that entrepreneurship is not endogenous in wealth, Table 7 below shows that there are no statistically significant differences between the wealth of entrepreneurial households and that of employee households at the different unconditional quantiles. As the conditional estimates above show, while HRP parent's being entrepreneurs is the principal candidate instrument for entrepreneurial HRPs, it appears to instead instrument for itself. Nevertheless, this applied in the weighted estimates but not in the unweighted ones and we estimate unconditional treatment effects on the unweighted data. Table 8 however shows that the unconditional treatment effects model is able to detect some direct exogenous effects of entrepreneurial parents on their children's (HRPs) household wealth. While this weakens its ability to recover the causal effects of entrepreneurship on household wealth, HRPs' fathers' entrepreneurship status is not highly significant and may thus be useful still.

Table 7: Unconditional quantile treatment estimates: assuming exogenous entrepreneurship

Dependent variable is total household wealth; Independent (treatment) variable is entrepreneurship (i.e. HRP entrepreneur vs. employee)				
	(1)	(2)	(3)	(4)
	IHS	LOG	CURT	Levels
1 st Percentile	-0.471 (1.508)	-6.036 (4.749)	-1.109 (1.345)	-0.484 (11.129)
10 th Percentile	0.201 (0.257)	0.206 (0.264)	0.114 (0.147)	0.942 (1.254)
25 th Percentile	0.030 (0.104)	0.030 (0.104)	0.024 (0.085)	0.421 (1.558)
Median	0.016 (0.057)	0.016 (0.057)	0.018 (0.062)	0.558 (1.951)
75 th Percentile	0.003 (0.040)	0.003 (0.040)	0.004 (0.055)	0.220 (2.863)
90 th Percentile	0.080 (0.057)	0.080 (0.057)	0.135 (0.097)	10.486 (7.651)
95 th Percentile	0.064 (0.071)	0.064 (0.071)	0.119 (0.134)	11.239 (13.099)
99 th Percentile	0.054 (0.110)	0.054 (0.110)	0.130 (0.265)	20.396 (42.002)
Observations	9,553	9,553	9,553	9,553

Cluster bootstrapped (1000 replications) standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; Other HRP and household characteristics, family back ground, and other contextual factors included as covariates; IHS, LOG and CURT refer to Inverse Hyperbolic Sine, log and cuberoot transformed wealth. Levels is raw wealth in 2012 £'0,000s.

Table 8: Unconditional quantile treatment effects of Entrepreneurial parents

Dependent variable is total household wealth; Independent (treatment) variable is HRP father being an entrepreneur				
VARIABLES	(1) IHS	(2) LOG	(3) CURT	(4) Levels
1 st Percentile	-0.406 (0.323)	-6.424 (4.671)	-1.100 (0.735)	-0.413 (0.335)
10 th Percentile	-0.091 (0.164)	-0.094 (0.171)	-0.049 (0.088)	-0.372 (0.638)
25 th Percentile	0.043 (0.086)	0.043 (0.086)	0.035 (0.070)	0.607 (1.242)
Median	0.103* (0.053)	0.103* (0.053)	0.113* (0.059)	3.672* (1.957)
75 th Percentile	0.057 (0.047)	0.057 (0.047)	0.080 (0.065)	4.201 (3.481)
90 th Percentile	0.129** (0.058)	0.129** (0.058)	0.220** (0.101)	17.254** (8.043)
95 th Percentile	0.129* (0.069)	0.129* (0.069)	0.243* (0.131)	23.445* (12.852)
99 th Percentile	0.239* (0.140)	0.239* (0.140)	0.585* (0.355)	95.050 (61.780)
Observations	9,553	9,553	9,553	9,553

Cluster bootstrapped (1000 replications) standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; Other HRP and household characteristics, family back ground, and other contextual factors included as covariates; IHS, LOG and CURT refer to Inverse Hyperbolic Sine, log and cuberoot transformed wealth. Levels is raw wealth in 2012 £'0,000s.

Using HRPs' fathers' entrepreneurial status to instrument for the HRP's own entrepreneurial status, Table 9 reports the estimates of the unconditional endogeneous quantile treatment effects – the estimator proposed by (Frölich and Melly, 2008; Frölich and Melly, 2010). This model estimates that entrepreneurship highly increases household wealth for households that are already well off. For households at the median level of wealth, all estimates suggest that entrepreneurship could more than double household wealth (an increase of around £380,000 on the £340,000 unweighted median wealth). The impact of entrepreneurship on household wealth is seemingly even greater at higher levels of household wealth. For households at the 99th percentile, the levels estimate suggests that entrepreneurship could add a further half a billion pounds to household wealth. The cuberoot estimates suggests a fourfold increase in wealth while IHS and log estimates are even greater.

Crucially, these estimates have substantially large standard errors which means that the precision of the estimates is relatively low. Further, it is important to recall that the estimates do not put the sampling weights into account and we know that although only financial wealth in shareholding was used in the design stage (ONS, 2012), relatively wealthier households (those in the 90th percentile of financial wealth in every cluster) were oversampled at a rate of 3 times that of other households in every cluster. This means that the unweighted sample is highly biased. For example, for the economically active working-age group, the weighted 99th percentile is about £2.9 Billion (£2.99 Billion for all households) while the unweighted one is £3.7 Billion (£3.9 for full sample) – a difference of almost £1 Billion. The weighted and unweighted medians are £270,000 and £340,000 respectively. Further, as recent research has also observed (Coad *et al.*, 2014), the efficacy of parent's entrepreneurship status as an instrument for entrepreneurship may itself be questioned. Parental entrepreneurship may not only instrument for itself, but the presence of defiers may not be ruled out completely and only a few compliers may be observed after all. In the present case, the proportion of compliers was 6%. These estimates should therefore be interpreted with caution.

Table 9: The causal effect of entrepreneurship on household wealth: unconditional endogenous quantile treatment estimates

Dependent variable is total household wealth; Independent (treatment) variable is instrumented entrepreneurship (i.e. HRP entrepreneur instrumented by HRP father is entrepreneur)				
VARIABLES	(1) IHS	(2) Log	(3) Curt	(4) Levels
1 st Percentile	1.725 (1.467)	1.754 (2.705)	1.210 (1.039)	17.103* (10.333)
10 th Percentile	0.889 (1.002)	0.891 (1.102)	0.769 (0.646)	15.836 (10.080)
25 th Percentile	0.880 (0.693)	0.881 (0.707)	0.850 (0.546)	21.822* (12.828)
Median	0.916** (0.458)	0.917** (0.459)	1.049** (0.469)	37.995** (16.274)
75 th Percentile	1.106** (0.551)	1.106** (0.551)	1.413* (0.744)	64.445 (46.393)
90 th Percentile	1.486** (0.628)	1.487** (0.628)	2.246** (1.003)	146.994 (98.517)
95 th Percentile	1.950*** (0.740)	1.950*** (0.741)	3.389** (1.335)	305.819* (163.589)
99 th Percentile	2.161*** (0.758)	2.161*** (0.758)	4.364*** (1.445)	543.084** (226.536)
Observations	9,549	9,549	9,549	9,549

Cluster bootstrapped (1000 replications) standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; Other HRP and household characteristics, family back ground, and other contextual factors included as covariates; IHS, LOG and CURT refer to Inverse Hyperbolic Sine, log and cuberoot transformed wealth. Levels is raw wealth in 2012 £'0,000s.

5 Conclusions

This study attempted to address two issues central to understanding the financial rewards of entrepreneurship. Firstly, we examined the size, composition and distribution of wealth owned by entrepreneurs relative to the wealth of other groups of economically active or economically inactive groups. Secondly, we explored whether a causal relationship could be established to understand whether the apparent wealth of entrepreneurs was directly attributable to entrepreneurial activities rather than other factors. In so doing, we provide a more nuanced understanding of the financial rewards of entrepreneurship, contributing new insights that move the field beyond the entrepreneurial incomes puzzle that has preoccupied scholars to date.

It is clear from this study that entrepreneurial households own disproportionately more wealth than other households. Between them, the two groups of entrepreneurs, self-employed with no employees and business owners with employees, comprise 8% of households, yet own 15% of household property wealthy, 13% of net financial wealth and 12% of physical wealth including 15% of the value of household motor vehicles and almost 30% of all household valuables and collectables. The wealth of entrepreneurs with employees is greater than the wealth of the self-employed with no employees. While only 2% of households have HRPs who are owner-managers of small businesses with employees, collectively these households own 4% of total household wealth. The self-employed with no employees account for 6% of households, but own a slightly higher proportion (7%) of total household wealth. This finding contradicts some prior studies that have measured entrepreneurial earnings using incomes data (Blanchflower, 2004; Shane, 2008), which have argued that entrepreneurship does not pay. Rather, entrepreneurial households that are frequently argued to be ‘income poor’, can instead be seen to hold a variety of assets that can be used to supplement household budgets over time, smoothing consumption for the household and providing a credit cushion for the business.

It is apparent that entrepreneurial households are relatively overrepresented in the higher echelons of wealth and there are also indications that entrepreneurship could be, to some extent responsible, for the higher levels of wealth observed. However, there is a great diversity in the wealth owned by entrepreneurial households, and it is important not to over-hype the fortunes that may be expected from entrepreneurship. Indeed, differences between entrepreneurial households and employee households over the entire distribution of wealth are small, if existent at all. The extent to which differences in wealth observed among entrepreneurial households can be directly attributed to entrepreneurship are more difficult to demonstrate. Among the methodological difficulties encountered, finding good instruments remains a huge challenge and estimation tools that take into account issues such as survey data weights, selection, endogeneity, and heterogeneity have yet to be developed, although Frölich and Melly's (2010) instrumental variable quantile treatment effects (IVQTE) STATA module is an important step in this direction. In all, while the Wealth and Assets Survey provides powerful insights, it is relatively new and further waves will provide a robust panel dataset tracking the fortunes of individuals and households over time, providing more insights into the effects of entrepreneurship on socio-economic mobility.

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6 Appendices

Table A2: OLS regression: IHS of wealth

VARIABLES	(1) Unweighted	(2) Weighted	(3) Clustered	(4) Cluster_nowgt	(5) ihwealthw2	(6) workinghrpw2
Entrepreneurial household (0 = otherwise)	0.003 (0.033)	-0.029 (0.043)	-0.029 (0.044)	0.003 (0.034)	-0.008 (0.040)	
HRP father entrepreneur (0 = otherwise)	0.018 (0.035)	-0.002 (0.048)	-0.002 (0.049)	0.018 (0.037)	0.017 (0.046)	
HRP mother entrepreneur (0 = otherwise)	0.063 (0.055)	0.041 (0.088)	0.041 (0.089)	0.063 (0.061)	0.038 (0.078)	
HRP age (yrs)	0.214*** (0.011)	0.210*** (0.013)	0.210*** (0.013)	0.214*** (0.011)	0.144*** (0.014)	0.144*** (0.014)
HRP age squared	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.001*** (0.000)	-0.002*** (0.000)
HRP Female (0 = Male)	-0.136*** (0.028)	-0.136*** (0.035)	-0.136*** (0.035)	-0.136*** (0.028)	-0.034 (0.036)	-0.114*** (0.043)
HRP Qualification; 0=No Quals HRP other qualifications	0.349*** (0.045)	0.288*** (0.058)	0.288*** (0.058)	0.349*** (0.049)	-0.048 (0.062)	0.615*** (0.047)
HRP Degree qualifications	0.851*** (0.049)	0.776*** (0.064)	0.776*** (0.065)	0.851*** (0.054)	0.312*** (0.070)	0.972*** (0.057)
HRP Industry; 0 = Agri/primary Manufacturing	0.177 (0.175)	0.144 (0.154)	0.144 (0.153)	0.177 (0.133)	0.150 (0.153)	
Utilities	0.364* (0.195)	0.293* (0.170)	0.293* (0.171)	0.364** (0.152)	0.284* (0.170)	
Construction	0.088 (0.176)	0.018 (0.158)	0.018 (0.157)	0.088 (0.135)	0.026 (0.156)	
Retails, repairs and storage	0.010 (0.175)	-0.025 (0.154)	-0.025 (0.153)	0.010 (0.133)	-0.009 (0.153)	
Hospitality	-0.370** (0.188)	-0.498*** (0.185)	-0.498*** (0.183)	-0.370** (0.159)	-0.446** (0.176)	
ICT	0.347* (0.180)	0.350** (0.165)	0.350** (0.165)	0.347** (0.141)	0.372** (0.163)	
Finance and other prof services	0.275 (0.175)	0.236 (0.154)	0.236 (0.153)	0.275** (0.133)	0.256* (0.153)	
Govt, education and health	0.369** (0.175)	0.378** (0.153)	0.378** (0.153)	0.369*** (0.134)	0.383** (0.153)	
Arts and entertainment	0.226 (0.189)	0.278 (0.171)	0.278 (0.170)	0.226 (0.149)	0.271 (0.168)	
Other services	-0.075 (0.186)	-0.062 (0.177)	-0.062 (0.176)	-0.075 (0.152)	-0.036 (0.172)	
Long-term illness; 0 = Never Previously long-ill	-0.049 (0.082)	-0.080 (0.096)	-0.080 (0.095)	-0.049 (0.079)	0.071 (0.103)	-0.363*** (0.111)
Presently long-ill	-0.127*** (0.029)	-0.127*** (0.038)	-0.127*** (0.038)	-0.127*** (0.030)	0.350*** (0.046)	-0.967*** (0.039)
HRP ethnicity; 0 = White British White other	-0.338*** (0.080)	-0.340** (0.133)	-0.340*** (0.131)	-0.338*** (0.101)	-0.253** (0.118)	
Mixed	-0.300** (0.128)	-0.336** (0.152)	-0.336** (0.151)	-0.300** (0.140)	-0.313** (0.136)	
Indian	0.069 (0.159)	-0.066 (0.282)	-0.066 (0.277)	0.069 (0.238)	-0.060 (0.271)	
Pakistani	-0.015 (0.195)	-0.337 (0.295)	-0.337 (0.286)	-0.015 (0.242)	-0.446 (0.319)	
Bangladeshi	0.309 (0.305)	-0.013 (0.419)	-0.013 (0.404)	0.309 (0.365)	-0.157 (0.392)	
Other Asian	-0.447*** (0.158)	-0.516** (0.254)	-0.516* (0.270)	-0.447* (0.240)	-0.471* (0.270)	
Black Caribbean	-0.327*** (0.113)	-0.206 (0.193)	-0.206 (0.198)	-0.327** (0.155)	-0.168 (0.171)	
Black African	-0.832*** (0.135)	-0.864*** (0.206)	-0.864*** (0.199)	-0.832*** (0.179)	-0.781*** (0.196)	
Other black	-1.188*** (0.430)	-1.099 (0.859)	-1.099 (0.859)	-1.188* (0.644)	-0.664 (0.919)	
Chinese	0.506** (0.236)	0.592** (0.291)	0.592* (0.303)	0.506* (0.278)	0.511** (0.258)	
Other ethnicity	-0.371** (0.158)	-0.501** (0.227)	-0.501** (0.223)	-0.371** (0.187)	-0.524** (0.224)	
HRP Country of birth; 0 = UK Other Anglo-saxon countries	0.336***	0.457***	0.457***	0.336***	0.411***	

	(0.102)	(0.127)	(0.125)	(0.103)	(0.115)
Europe	-0.408***	-0.491***	-0.491***	-0.408***	-0.473***
	(0.087)	(0.128)	(0.132)	(0.109)	(0.119)
Commonwealth countries	-0.330***	-0.327***	-0.327***	-0.330***	-0.300***
	(0.079)	(0.113)	(0.111)	(0.099)	(0.104)
Rest of the world	-0.389***	-0.439***	-0.439***	-0.389***	-0.395***
	(0.093)	(0.139)	(0.138)	(0.111)	(0.137)
HRP Religion; 0=Practising Christian					
Non-practising Christian	-0.001	0.006	0.006	-0.001	0.008
	(0.029)	(0.033)	(0.034)	(0.028)	(0.032)
Muslim	-0.092	0.116	0.116	-0.092	0.228
	(0.144)	(0.251)	(0.239)	(0.200)	(0.276)
Jewish	0.260*	0.291*	0.291*	0.260*	0.342*
	(0.144)	(0.166)	(0.167)	(0.141)	(0.190)
Hindu/ Sikh	-0.097	0.014	0.014	-0.097	0.062
	(0.156)	(0.285)	(0.279)	(0.241)	(0.267)
Buddhist/ Other	-0.376***	-0.447**	-0.447**	-0.376***	-0.431***
	(0.111)	(0.174)	(0.177)	(0.124)	(0.160)
No religion	-0.148***	-0.135***	-0.135***	-0.148***	-0.136***
	(0.036)	(0.043)	(0.045)	(0.037)	(0.041)
HRP/Partner received inheritance	0.209***	0.210***	0.210***	0.209***	0.207***
(0=Never)	(0.027)	(0.033)	(0.033)	(0.027)	(0.031)
HRP/Partner received lumpsum	0.060**	0.106***	0.106***	0.060*	0.109***
(0=Never)	(0.029)	(0.037)	(0.038)	(0.031)	(0.035)
HRP father qualifications; 0= Degree					
Further Quals	-0.078	-0.083	-0.083	-0.078	-0.093
	(0.054)	(0.072)	(0.072)	(0.055)	(0.070)
Left 17 or 18	-0.058	-0.042	-0.042	-0.058	-0.057
	(0.064)	(0.086)	(0.087)	(0.067)	(0.084)
Left 15 or 16	-0.111**	-0.119	-0.119	-0.111*	-0.136*
	(0.055)	(0.074)	(0.075)	(0.057)	(0.072)
Left before 15	-0.152***	-0.154**	-0.154**	-0.152***	-0.167**
	(0.056)	(0.078)	(0.078)	(0.059)	(0.075)
Father no school	-0.144	-0.280	-0.280	-0.144	-0.227
	(0.135)	(0.175)	(0.170)	(0.138)	(0.163)
HRP no father growing up	-0.219***	-0.248***	-0.248***	-0.219***	-0.252***
	(0.060)	(0.084)	(0.086)	(0.065)	(0.080)
HRP mother qualifications; 0= Degree					
Further Quals	-0.001	0.065	0.065	-0.001	0.052
	(0.066)	(0.088)	(0.087)	(0.069)	(0.080)
Left 17 or 18	0.047	0.074	0.074	0.047	0.080
	(0.070)	(0.095)	(0.095)	(0.075)	(0.090)
Left 15 or 16	-0.064	-0.014	-0.014	-0.064	-0.015
	(0.064)	(0.087)	(0.088)	(0.069)	(0.081)
Left before 15	-0.066	-0.014	-0.014	-0.066	-0.014
	(0.066)	(0.091)	(0.092)	(0.071)	(0.084)
Mother no school	0.001	0.263	0.263	0.001	0.203
	(0.129)	(0.165)	(0.170)	(0.143)	(0.169)
HRP no mother growing up	-0.177**	-0.141	-0.141	-0.177*	-0.122
	(0.085)	(0.115)	(0.115)	(0.093)	(0.108)
HRP number of siblings; 0 = Lone child					
1-4 siblings	-0.086**	-0.069	-0.069	-0.086***	-0.069*
	(0.034)	(0.043)	(0.042)	(0.033)	(0.039)
5-9 siblings	-0.404***	-0.372***	-0.372***	-0.404***	-0.352***
	(0.056)	(0.072)	(0.072)	(0.061)	(0.067)
10+/ Non-family home	-0.517***	-0.510**	-0.510**	-0.517**	-0.523**
	(0.164)	(0.235)	(0.235)	(0.224)	(0.217)
HRP growing up home tenure; 0 = Fully owned					
Mortgage	0.037	0.079**	0.079**	0.037	0.065*
	(0.030)	(0.037)	(0.037)	(0.029)	(0.034)
Renting	-0.253***	-0.186***	-0.186***	-0.253***	-0.197***
	(0.033)	(0.042)	(0.042)	(0.034)	(0.040)
Free housing/foster/inst/other	-0.210***	-0.095	-0.095	-0.210***	-0.104
	(0.072)	(0.095)	(0.093)	(0.074)	(0.084)
Present household type; 0 = Single under SPA					
Couple under SPA, no kids	0.539***	0.542***	0.542***	0.539***	0.509***
	(0.071)	(0.095)	(0.095)	(0.075)	(0.088)
Couple, 1 under SPA, no kids	0.558***	0.631***	0.631***	0.558***	0.598***
	(0.087)	(0.101)	(0.102)	(0.083)	(0.097)
Couple under SPA, dep kids	0.535***	0.554***	0.554***	0.535***	0.531***
	(0.074)	(0.102)	(0.104)	(0.081)	(0.099)
Couple under SPA, non-dep kids	0.478***	0.533***	0.533***	0.478***	0.474***
	(0.096)	(0.124)	(0.125)	(0.099)	(0.118)

Lone parent, dep kids	-0.275*** (0.053)	-0.279*** (0.070)	-0.279*** (0.071)	-0.275*** (0.060)	-0.181*** (0.069)	
Lone parent, non-dep kids	-0.246*** (0.092)	-0.261** (0.129)	-0.261** (0.125)	-0.246** (0.106)	-0.274** (0.114)	
2+ Families/other hsehold	0.346*** (0.090)	0.350*** (0.132)	0.350*** (0.133)	0.346*** (0.098)	0.347*** (0.121)	
Non HRP Human capital (edu yrs)	0.005 (0.005)	0.001 (0.007)	0.001 (0.007)	0.005 (0.006)	0.003 (0.007)	
Non HRP Human capital squared	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	
Number of jobs in the household; 0=1 job						
2 jobs	0.129*** (0.031)	0.207*** (0.042)	0.207*** (0.042)	0.129*** (0.032)	0.192*** (0.038)	
3+ jobs	0.048 (0.060)	0.144** (0.069)	0.144** (0.070)	0.048 (0.058)	0.113* (0.065)	
Non-HRP long-term illness; 0 = none						
Non-HRP previously long-ill	0.027 (0.102)	-0.016 (0.109)	-0.016 (0.110)	0.027 (0.097)	-0.092 (0.115)	0.259* (0.153)
Non-HRP presently long-ill	-0.109*** (0.033)	-0.112*** (0.039)	-0.112*** (0.039)	-0.109*** (0.032)	-0.119*** (0.041)	0.046 (0.043)
Rural (0= Urban)	0.155*** (0.029)	0.151*** (0.033)	0.151*** (0.033)	0.155*** (0.028)	0.149*** (0.030)	
Region						
Wales	0.083 (0.061)	0.067 (0.070)	0.067 (0.072)	0.083 (0.061)	0.113 (0.074)	-0.059 (0.078)
South West	0.059 (0.052)	0.044 (0.061)	0.044 (0.064)	0.059 (0.056)	-0.006 (0.067)	0.181** (0.081)
South East	0.205*** (0.046)	0.177*** (0.053)	0.177*** (0.058)	0.205*** (0.049)	0.118** (0.059)	0.246*** (0.064)
London	0.188*** (0.053)	0.200*** (0.066)	0.200*** (0.067)	0.188*** (0.060)	0.217*** (0.069)	0.020 (0.075)
East of England	0.106** (0.050)	0.124** (0.061)	0.124** (0.061)	0.106** (0.051)	0.074 (0.063)	0.205*** (0.071)
West Midlands	0.068 (0.051)	0.074 (0.058)	0.074 (0.062)	0.068 (0.056)	0.093 (0.066)	0.007 (0.074)
East Midlands	0.017 (0.052)	0.035 (0.062)	0.035 (0.063)	0.017 (0.055)	0.005 (0.065)	0.136* (0.074)
Yorks and Humbers	0.071 (0.050)	0.126** (0.053)	0.126** (0.058)	0.071 (0.051)	0.145** (0.061)	-0.025 (0.071)
North West	-0.063 (0.048)	-0.032 (0.055)	-0.032 (0.058)	-0.063 (0.051)	-0.018 (0.060)	0.027 (0.064)
North East	-0.011 (0.063)	-0.023 (0.073)	-0.023 (0.078)	-0.011 (0.067)	0.006 (0.085)	0.002 (0.088)
Year; 0 = 2008						
Year 2009	-0.082*** (0.027)	-0.082** (0.032)	-0.082** (0.033)	-0.082*** (0.028)	-0.081*** (0.031)	
Year 2010	-0.075** (0.031)	-0.084** (0.038)	-0.084** (0.038)	-0.075** (0.032)	-0.073** (0.036)	
Dependent Children						0.145*** (0.049)
Dependent Children#Female						-0.513*** (0.067)
HRP Father unemployed						-0.047 (0.093)
HRP Mother unemployed						-0.018 (0.031)
Constant	-2.974*** (0.296)	-2.996*** (0.336)	-2.996*** (0.347)	-2.974*** (0.294)	-1.181*** (0.364)	-2.140*** (0.317)
Observations	9,064	9,064	9,064	9,064	11,599	11,599
R-squared	0.454	0.442	0.442	0.454		
Model p-value	0.000	0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table A3: OLS regression: Log of wealth

VARIABLES	(1) Unweighted	(2) Weighted	(3) Cluster_wgt	(4) Cluster_nowgt	(5) Heckman	(6) Selection
Entrepreneurial household (0 = otherwise)	-0.008 (0.048)	-0.058 (0.070)	-0.058 (0.072)	-0.008 (0.048)	0.008 (0.053)	
HRP father entrepreneur (0 = otherwise)	-0.017 (0.051)	-0.045 (0.085)	-0.045 (0.086)	-0.017 (0.057)	0.032 (0.065)	
HRP mother entrepreneur (0 = otherwise)	0.043 (0.080)	-0.001 (0.156)	-0.001 (0.156)	0.043 (0.096)	-0.001 (0.107)	
HRP age (yrs)	0.276*** (0.016)	0.279*** (0.024)	0.279*** (0.026)	0.276*** (0.020)	0.147*** (0.024)	0.086*** (0.014)
HRP age squared	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
HRP Female (0 = Male)	-0.156*** (0.041)	-0.148** (0.062)	-0.148** (0.061)	-0.156*** (0.042)	0.023 (0.057)	-0.104*** (0.038)
HRP Qualification; 0=No Quals HRP other qualifications	0.333*** (0.065)	0.238*** (0.086)	0.238*** (0.086)	0.333*** (0.068)	-0.380*** (0.089)	0.495*** (0.045)
HRP Degree qualifications	0.857*** (0.072)	0.752*** (0.096)	0.752*** (0.099)	0.857*** (0.075)	-0.079 (0.100)	0.758*** (0.055)
HRP Industry; 0 = Agri/primary Manufacturing	0.152 (0.256)	0.083 (0.169)	0.083 (0.169)	0.152 (0.141)	0.101 (0.179)	
Utilities	0.397 (0.285)	0.321* (0.179)	0.321* (0.180)	0.397** (0.157)	0.251 (0.192)	
Construction	0.024 (0.258)	-0.106 (0.179)	-0.106 (0.180)	0.024 (0.146)	-0.038 (0.185)	
Retails, repairs and storage	-0.058 (0.256)	-0.124 (0.167)	-0.124 (0.167)	-0.058 (0.141)	-0.053 (0.177)	
Hospitality	-0.632** (0.274)	-0.985*** (0.295)	-0.985*** (0.291)	-0.632*** (0.208)	-0.610*** (0.214)	
ICT	0.304 (0.263)	0.309* (0.188)	0.309 (0.188)	0.304* (0.156)	0.338* (0.192)	
Finance and other prof services	0.260 (0.256)	0.214 (0.166)	0.214 (0.166)	0.260* (0.140)	0.247 (0.178)	
Govt, education and health	0.365 (0.255)	0.359** (0.164)	0.359** (0.165)	0.365*** (0.140)	0.370** (0.177)	
Arts and entertainment	0.231 (0.276)	0.316* (0.182)	0.316* (0.182)	0.231 (0.164)	0.266 (0.193)	
Other services	-0.182 (0.273)	-0.255 (0.250)	-0.255 (0.249)	-0.182 (0.187)	-0.134 (0.207)	
Long-term illness; 0 = Never Previously long-ill	-0.058 (0.120)	-0.110 (0.171)	-0.110 (0.171)	-0.058 (0.123)	0.163 (0.174)	-0.233** (0.105)
Presently long-ill	-0.137*** (0.042)	-0.129** (0.061)	-0.129** (0.060)	-0.137*** (0.043)	0.744*** (0.068)	-0.763*** (0.038)
HRP ethnicity; 0 = White British White other	-0.526*** (0.118)	-0.600** (0.267)	-0.600** (0.266)	-0.526*** (0.174)	-0.269* (0.164)	
Mixed	-0.258 (0.187)	-0.401 (0.274)	-0.401 (0.274)	-0.258 (0.200)	-0.406** (0.176)	
Indian	0.196 (0.232)	-0.073 (0.478)	-0.073 (0.471)	0.196 (0.402)	-0.103 (0.353)	
Pakistani	0.064 (0.286)	-0.369 (0.449)	-0.369 (0.443)	0.064 (0.339)	-0.734* (0.422)	
Bangladeshi	0.009 (0.445)	-0.829 (1.042)	-0.829 (1.025)	0.009 (0.700)	-0.838 (0.639)	
Other Asian	-0.615*** (0.231)	-0.740 (0.522)	-0.740 (0.525)	-0.615 (0.391)	-0.551 (0.341)	
Black Caribbean	-0.524*** (0.166)	-0.458 (0.360)	-0.458 (0.367)	-0.524* (0.279)	-0.277 (0.213)	
Black African	-1.103*** (0.198)	-1.317*** (0.447)	-1.317*** (0.443)	-1.103*** (0.341)	-0.814*** (0.306)	
Other black	-1.059* (0.629)	-0.881 (0.783)	-0.881 (0.778)	-1.059 (0.657)	-0.140 (0.636)	
Chinese	0.746** (0.345)	0.949** (0.374)	0.949** (0.402)	0.746** (0.311)	0.537** (0.269)	
Other ethnicity	-0.394* (0.231)	-0.617 (0.379)	-0.617 (0.376)	-0.394 (0.251)	-0.597** (0.264)	
HRP Country of birth; 0 = UK Other Anglo-saxon countries	0.409*** (0.148)	0.507* (0.267)	0.507* (0.264)	0.409*** (0.148)	0.396** (0.189)	
Europe	-0.435***	-0.519**	-0.519**	-0.435***	-0.465***	

	(0.127)	(0.244)	(0.246)	(0.168)	(0.156)
Commonwealth countries	-0.405***	-0.254	-0.254	-0.405**	-0.213*
	(0.115)	(0.183)	(0.183)	(0.174)	(0.126)
Rest of the world	-0.446***	-0.582**	-0.582**	-0.446***	-0.369**
	(0.136)	(0.258)	(0.258)	(0.172)	(0.186)
HRP Religion; 0=Practising Christian					
Non-practising Christian	0.011	0.018	0.018	0.011	0.019
	(0.042)	(0.053)	(0.053)	(0.040)	(0.040)
Muslim	-0.015	0.213	0.213	-0.015	0.584
	(0.210)	(0.382)	(0.377)	(0.287)	(0.376)
Jewish	0.338	0.408**	0.408**	0.338**	0.519**
	(0.211)	(0.189)	(0.189)	(0.153)	(0.238)
Hindu/ Sikh	-0.183	-0.047	-0.047	-0.183	0.124
	(0.228)	(0.491)	(0.490)	(0.429)	(0.360)
Buddhist/ Other	-0.464***	-0.728*	-0.728*	-0.464**	-0.525**
	(0.162)	(0.405)	(0.408)	(0.216)	(0.250)
No religion	-0.174***	-0.150**	-0.150**	-0.174***	-0.144***
	(0.052)	(0.070)	(0.069)	(0.053)	(0.052)
HRP/Partner received inheritance	0.229***	0.230***	0.230***	0.229***	0.215***
(0=Never)	(0.040)	(0.051)	(0.050)	(0.037)	(0.038)
HRP/Partner received lumpsum	0.028	0.071	0.071	0.028	0.091*
(0=Never)	(0.043)	(0.067)	(0.067)	(0.048)	(0.047)
HRP father qualifications; 0= Degree					
Further Quals	-0.102	-0.088	-0.088	-0.102	-0.133
	(0.079)	(0.138)	(0.140)	(0.090)	(0.106)
Left 17 or 18	-0.110	-0.079	-0.079	-0.110	-0.104
	(0.093)	(0.159)	(0.161)	(0.109)	(0.126)
Left 15 or 16	-0.120	-0.127	-0.127	-0.120	-0.173
	(0.080)	(0.139)	(0.141)	(0.091)	(0.110)
Left before 15	-0.184**	-0.200	-0.200	-0.184*	-0.224*
	(0.082)	(0.152)	(0.154)	(0.096)	(0.115)
Father no school	-0.150	-0.385	-0.385	-0.150	-0.257
	(0.197)	(0.344)	(0.333)	(0.207)	(0.269)
HRP no father growing up	-0.232***	-0.278*	-0.278*	-0.232**	-0.289**
	(0.087)	(0.158)	(0.161)	(0.101)	(0.118)
HRP mother qualifications; 0= Degree					
Further Quals	-0.045	0.034	0.034	-0.045	0.013
	(0.096)	(0.171)	(0.166)	(0.113)	(0.114)
Left 17 or 18	0.054	0.109	0.109	0.054	0.125
	(0.102)	(0.174)	(0.175)	(0.122)	(0.129)
Left 15 or 16	-0.088	-0.033	-0.033	-0.088	-0.018
	(0.093)	(0.167)	(0.167)	(0.113)	(0.114)
Left before 15	-0.081	-0.017	-0.017	-0.081	-0.007
	(0.097)	(0.178)	(0.179)	(0.117)	(0.119)
Mother no school	0.082	0.435	0.435	0.082	0.307
	(0.188)	(0.317)	(0.322)	(0.212)	(0.262)
HRP no mother growing up	-0.189	-0.144	-0.144	-0.189	-0.061
	(0.124)	(0.209)	(0.207)	(0.143)	(0.145)
HRP number of siblings; 0 = Lone child					
1-4 siblings	-0.085*	-0.059	-0.059	-0.085*	-0.073
	(0.050)	(0.072)	(0.072)	(0.049)	(0.050)
5-9 siblings	-0.466***	-0.401***	-0.401***	-0.466***	-0.371***
	(0.082)	(0.110)	(0.110)	(0.091)	(0.081)
10+/ Non-family home	-0.921***	-1.059*	-1.059*	-0.921*	-0.671**
	(0.240)	(0.606)	(0.608)	(0.470)	(0.311)
HRP growing up home tenure; 0 = Fully owned					
Mortgage	0.034	0.066	0.066	0.034	0.028
	(0.044)	(0.060)	(0.060)	(0.041)	(0.047)
Renting	-0.318***	-0.270***	-0.270***	-0.318***	-0.251***
	(0.048)	(0.072)	(0.070)	(0.048)	(0.054)
Free housing/foster/inst/other	-0.298***	-0.140	-0.140	-0.298**	-0.186*
	(0.105)	(0.162)	(0.160)	(0.125)	(0.106)
Present household type; 0 = Single under SPA					
Couple under SPA, no kids	0.579***	0.544***	0.544***	0.579***	0.467***
	(0.103)	(0.166)	(0.167)	(0.113)	(0.118)
Couple, 1 under SPA, no kids	0.651***	0.706***	0.706***	0.651***	0.542***
	(0.128)	(0.164)	(0.167)	(0.117)	(0.127)
Couple under SPA, dep kids	0.569***	0.542***	0.542***	0.569***	0.486***
	(0.108)	(0.185)	(0.187)	(0.125)	(0.138)
Couple under SPA, non-dep kids	0.497***	0.508**	0.508**	0.497***	0.358**
	(0.140)	(0.220)	(0.222)	(0.149)	(0.159)
Lone parent, dep kids	-0.303***	-0.367***	-0.367***	-0.303***	-0.160
	(0.078)	(0.122)	(0.123)	(0.093)	(0.097)
Lone parent, non-dep kids	-0.310**	-0.381*	-0.381*	-0.310*	-0.301**
	(0.135)	(0.216)	(0.211)	(0.159)	(0.143)

2+ Families/other hsehold	0.416*** (0.132)	0.368 (0.241)	0.368 (0.242)	0.416*** (0.148)	0.320* (0.166)	
Non HRP Human capital (edu yrs)	0.005 (0.008)	0.002 (0.013)	0.002 (0.013)	0.005 (0.008)	0.005 (0.009)	
Non HRP Human capital squared	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	
Number of jobs in the household; 0=1 job						
2 jobs	0.197*** (0.045)	0.313*** (0.077)	0.313*** (0.078)	0.197*** (0.050)	0.223*** (0.052)	
3+ jobs	0.158* (0.088)	0.296*** (0.107)	0.296*** (0.110)	0.158** (0.079)	0.160** (0.078)	
Non-HRP long-term illness; 0 = none						
Non-HRP previously long-ill	-0.014 (0.150)	-0.078 (0.180)	-0.078 (0.181)	-0.014 (0.140)	-0.185 (0.186)	0.196 (0.128)
Non-HRP presently long-ill	-0.112** (0.048)	-0.130** (0.065)	-0.130* (0.067)	-0.112** (0.044)	-0.134** (0.066)	0.030 (0.039)
Rural (0= Urban)	0.167*** (0.042)	0.188*** (0.050)	0.188*** (0.050)	0.167*** (0.038)	0.177*** (0.039)	
Region						
Wales	0.112 (0.089)	0.063 (0.106)	0.063 (0.111)	0.112 (0.084)	0.169 (0.112)	-0.013 (0.071)
South West	0.035 (0.077)	-0.049 (0.104)	-0.049 (0.103)	0.035 (0.079)	-0.123 (0.107)	0.195*** (0.069)
South East	0.183*** (0.067)	0.113 (0.083)	0.113 (0.085)	0.183*** (0.068)	0.013 (0.089)	0.214*** (0.054)
London	0.168** (0.077)	0.162 (0.110)	0.162 (0.105)	0.168** (0.086)	0.139 (0.106)	0.111* (0.065)
East of England	0.099 (0.072)	0.047 (0.106)	0.047 (0.103)	0.099 (0.074)	-0.037 (0.105)	0.220*** (0.065)
West Midlands	0.075 (0.075)	0.085 (0.081)	0.085 (0.084)	0.075 (0.075)	0.124 (0.094)	0.046 (0.065)
East Midlands	0.013 (0.076)	0.002 (0.097)	0.002 (0.098)	0.013 (0.079)	-0.056 (0.100)	0.139** (0.065)
Yorks and Humbers	0.092 (0.073)	0.154** (0.076)	0.154* (0.080)	0.092 (0.070)	0.192** (0.087)	-0.006 (0.059)
North West	-0.057 (0.070)	-0.034 (0.078)	-0.034 (0.082)	-0.057 (0.071)	-0.007 (0.087)	0.041 (0.055)
North East	0.018 (0.092)	-0.014 (0.102)	-0.014 (0.103)	0.018 (0.086)	0.050 (0.115)	0.013 (0.073)
Year; 0 = 2008						
Year 2009	-0.099** (0.039)	-0.098* (0.054)	-0.098* (0.055)	-0.099** (0.040)	-0.095** (0.042)	
Year 2010	-0.091** (0.046)	-0.088 (0.062)	-0.088 (0.061)	-0.091** (0.045)	-0.046 (0.048)	
Dependent Children						0.070* (0.041)
Dependent Children#Female						0.000 (0.000)
HRP Father unemployed						-0.284*** (0.051)
HRP Mother unemployed						-0.008 (0.069)
1.mumnoworkw2						0.001 (0.023)
Constant	-5.205*** (0.433)	-5.332*** (0.574)	-5.332*** (0.604)	-5.205*** (0.480)	-1.803*** (0.567)	-1.067*** (0.308)
Observations	9,064	9,064	9,064	9,064	11,599	11,599
R-squared	0.334	0.313	0.313	0.334		
Model p-value	0.000	0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table A4: OLS regression: Cube root of wealth

VARIABLES	(1) Unweighted	(2) Weighted	(3) Cluster_wgt	(4) Cluster_nowgt	(5) Heckman	(6) Selection
Entrepreneurial household (0 = otherwise)	0.015 (0.034)	-0.024 (0.041)	-0.024 (0.041)	0.015 (0.036)	-0.024 (0.041)	
HRP father entrepreneur (0 = otherwise)	0.046 (0.036)	0.023 (0.045)	0.023 (0.045)	0.046 (0.039)	0.023 (0.045)	
HRP mother entrepreneur (0 = otherwise)	0.039 (0.056)	0.028 (0.076)	0.028 (0.078)	0.039 (0.062)	0.026 (0.078)	
HRP age (yrs)	0.170*** (0.011)	0.166*** (0.012)	0.166*** (0.012)	0.170*** (0.011)	0.157*** (0.013)	0.171*** (0.015)
HRP age squared	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.002*** (0.000)
HRP Female (0 = Male)	-0.140*** (0.029)	-0.135*** (0.032)	-0.135*** (0.032)	-0.140*** (0.029)	-0.121*** (0.032)	-0.091* (0.047)
HRP Qualification; 0=No Quals HRP other qualifications	0.312*** (0.046)	0.242*** (0.048)	0.242*** (0.048)	0.312*** (0.044)	0.200*** (0.052)	0.684*** (0.047)
HRP Degree qualifications	0.896*** (0.051)	0.778*** (0.055)	0.778*** (0.056)	0.896*** (0.051)	0.719*** (0.063)	1.115*** (0.055)
HRP Industry; 0 = Agri/primary Manufacturing	0.181 (0.180)	0.148 (0.143)	0.148 (0.144)	0.181 (0.136)	0.151 (0.143)	
Utilities	0.471** (0.200)	0.343** (0.160)	0.343** (0.161)	0.471*** (0.167)	0.347** (0.160)	
Construction	0.091 (0.182)	0.040 (0.145)	0.040 (0.146)	0.091 (0.137)	0.041 (0.145)	
Retails, repairs and storage	0.039 (0.180)	0.018 (0.142)	0.018 (0.142)	0.039 (0.134)	0.021 (0.142)	
Hospitality	-0.168 (0.193)	-0.285* (0.164)	-0.285* (0.164)	-0.168 (0.154)	-0.283* (0.163)	
ICT	0.371** (0.185)	0.368** (0.152)	0.368** (0.154)	0.371*** (0.144)	0.372** (0.153)	
Finance and other prof services	0.336* (0.180)	0.295** (0.143)	0.295** (0.144)	0.336** (0.135)	0.299** (0.143)	
Govt, education and health	0.389** (0.180)	0.401*** (0.142)	0.401*** (0.143)	0.389*** (0.136)	0.404*** (0.143)	
Arts and entertainment	0.254 (0.194)	0.287* (0.158)	0.287* (0.158)	0.254* (0.152)	0.290* (0.158)	
Other services	-0.084 (0.192)	-0.050 (0.161)	-0.050 (0.161)	-0.084 (0.150)	-0.045 (0.160)	
Long-term illness; 0 = Never Previously long-ill	-0.042 (0.085)	-0.067 (0.087)	-0.067 (0.085)	-0.042 (0.088)	-0.047 (0.086)	-0.440*** (0.114)
Presently long-ill	-0.126*** (0.030)	-0.119*** (0.035)	-0.119*** (0.035)	-0.126*** (0.031)	-0.056 (0.047)	-1.084*** (0.036)
HRP ethnicity; 0 = White British White other	-0.273*** (0.083)	-0.241** (0.118)	-0.241** (0.117)	-0.273*** (0.096)	-0.239** (0.117)	
Mixed	-0.280** (0.132)	-0.343*** (0.128)	-0.343*** (0.127)	-0.280** (0.127)	-0.340*** (0.126)	
Indian	-0.020 (0.163)	-0.119 (0.255)	-0.119 (0.253)	-0.020 (0.229)	-0.114 (0.252)	
Pakistani	-0.229 (0.201)	-0.481* (0.274)	-0.481* (0.264)	-0.229 (0.218)	-0.478* (0.264)	
Bangladeshi	0.138 (0.313)	-0.183 (0.369)	-0.183 (0.356)	0.138 (0.356)	-0.178 (0.353)	
Other Asian	-0.328** (0.163)	-0.396* (0.226)	-0.396* (0.235)	-0.328 (0.233)	-0.397* (0.234)	
Black Caribbean	-0.302*** (0.117)	-0.209 (0.161)	-0.209 (0.163)	-0.302** (0.130)	-0.208 (0.161)	
Black African	-0.688*** (0.139)	-0.652*** (0.188)	-0.652*** (0.183)	-0.688*** (0.166)	-0.649*** (0.182)	
Other black	-0.436 (0.442)	-0.253 (1.081)	-0.253 (1.081)	-0.436 (0.756)	-0.251 (1.076)	
Chinese	0.550** (0.243)	0.515* (0.264)	0.515* (0.274)	0.550* (0.320)	0.509* (0.273)	
Other ethnicity	-0.425*** (0.163)	-0.470** (0.201)	-0.470** (0.198)	-0.425** (0.168)	-0.471** (0.197)	
HRP Country of birth; 0 = UK Other Anglo-saxon countries	0.284*** (0.104)	0.377*** (0.123)	0.377*** (0.122)	0.284** (0.111)	0.377*** (0.121)	
Europe	-0.350***	-0.390***	-0.390***	-0.350***	-0.390***	

	(0.089)	(0.110)	(0.113)	(0.098)	(0.112)
Commonwealth countries	-0.346***	-0.321***	-0.321***	-0.346***	-0.322***
	(0.081)	(0.102)	(0.101)	(0.095)	(0.100)
Rest of the world	-0.403***	-0.425***	-0.425***	-0.403***	-0.424***
	(0.095)	(0.128)	(0.126)	(0.108)	(0.125)
HRP Religion; 0=Practising Christian					
Non-practising Christian	-0.004	0.013	0.013	-0.004	0.013
	(0.030)	(0.032)	(0.032)	(0.031)	(0.032)
Muslim	0.049	0.239	0.239	0.049	0.237
	(0.148)	(0.245)	(0.236)	(0.184)	(0.236)
Jewish	0.303**	0.347*	0.347*	0.303*	0.349*
	(0.148)	(0.179)	(0.178)	(0.162)	(0.179)
Hindu/ Sikh	-0.070	0.035	0.035	-0.070	0.035
	(0.161)	(0.251)	(0.247)	(0.228)	(0.246)
Buddhist/ Other	-0.438***	-0.435***	-0.435***	-0.438***	-0.437***
	(0.114)	(0.156)	(0.160)	(0.116)	(0.159)
No religion	-0.128***	-0.107***	-0.107***	-0.128***	-0.106***
	(0.037)	(0.039)	(0.040)	(0.037)	(0.040)
HRP/Partner received inheritance	0.214***	0.205***	0.205***	0.214***	0.205***
(0=Never)	(0.028)	(0.031)	(0.031)	(0.029)	(0.031)
HRP/Partner received lumpsum	0.042	0.078**	0.078**	0.042	0.077**
(0=Never)	(0.030)	(0.034)	(0.034)	(0.030)	(0.034)
HRP father qualifications; 0= Degree					
Further Quals	-0.136**	-0.113	-0.113	-0.136**	-0.113*
	(0.055)	(0.069)	(0.069)	(0.063)	(0.068)
Left 17 or 18	-0.075	-0.039	-0.039	-0.075	-0.040
	(0.066)	(0.085)	(0.084)	(0.077)	(0.084)
Left 15 or 16	-0.186***	-0.162**	-0.162**	-0.186***	-0.162**
	(0.056)	(0.070)	(0.071)	(0.065)	(0.071)
Left before 15	-0.233***	-0.198***	-0.198***	-0.233***	-0.198***
	(0.058)	(0.073)	(0.073)	(0.067)	(0.073)
Father no school	-0.199	-0.265*	-0.265*	-0.199	-0.264*
	(0.139)	(0.156)	(0.153)	(0.141)	(0.152)
HRP no father growing up	-0.256***	-0.250***	-0.250***	-0.256***	-0.251***
	(0.061)	(0.076)	(0.077)	(0.070)	(0.076)
HRP mother qualifications; 0= Degree					
Further Quals	0.048	0.099	0.099	0.048	0.100
	(0.068)	(0.079)	(0.077)	(0.070)	(0.077)
Left 17 or 18	0.117	0.121	0.121	0.117	0.121
	(0.072)	(0.086)	(0.086)	(0.080)	(0.086)
Left 15 or 16	-0.006	0.039	0.039	-0.006	0.040
	(0.066)	(0.078)	(0.077)	(0.070)	(0.077)
Left before 15	-0.018	0.025	0.025	-0.018	0.025
	(0.068)	(0.081)	(0.080)	(0.073)	(0.080)
Mother no school	0.080	0.284*	0.284*	0.080	0.283*
	(0.133)	(0.146)	(0.154)	(0.136)	(0.154)
HRP no mother growing up	-0.095	-0.081	-0.081	-0.095	-0.081
	(0.088)	(0.103)	(0.102)	(0.099)	(0.101)
HRP number of siblings; 0 = Lone child					
1-4 siblings	-0.100***	-0.070*	-0.070*	-0.100***	-0.069*
	(0.035)	(0.039)	(0.038)	(0.036)	(0.038)
5-9 siblings	-0.438***	-0.400***	-0.400***	-0.438***	-0.399***
	(0.058)	(0.063)	(0.062)	(0.059)	(0.062)
10+ Non-family home	-0.505***	-0.498**	-0.498**	-0.505**	-0.503**
	(0.169)	(0.229)	(0.229)	(0.216)	(0.228)
HRP growing up home tenure; 0 = Fully owned					
Mortgage	-0.012	0.045	0.045	-0.012	0.046
	(0.031)	(0.034)	(0.034)	(0.031)	(0.034)
Renting	-0.282***	-0.192***	-0.192***	-0.282***	-0.192***
	(0.034)	(0.038)	(0.038)	(0.034)	(0.037)
Free housing/foster/inst/other	-0.237***	-0.076	-0.076	-0.237***	-0.074
	(0.074)	(0.085)	(0.084)	(0.073)	(0.084)
Present household type; 0 = Single under SPA					
Couple under SPA, no kids	0.569***	0.548***	0.548***	0.569***	0.549***
	(0.073)	(0.083)	(0.083)	(0.071)	(0.083)
Couple, 1 under SPA, no kids	0.516***	0.585***	0.585***	0.516***	0.591***
	(0.090)	(0.103)	(0.103)	(0.090)	(0.103)
Couple under SPA, dep kids	0.550***	0.569***	0.569***	0.550***	0.571***
	(0.076)	(0.088)	(0.089)	(0.074)	(0.089)
Couple under SPA, non-dep kids	0.481***	0.534***	0.534***	0.481***	0.536***
	(0.098)	(0.112)	(0.112)	(0.096)	(0.111)
Lone parent, dep kids	-0.155***	-0.163***	-0.163***	-0.155***	-0.147**
	(0.055)	(0.057)	(0.058)	(0.051)	(0.059)
Lone parent, non-dep kids	-0.245***	-0.237**	-0.237**	-0.245***	-0.240**
	(0.095)	(0.107)	(0.103)	(0.091)	(0.103)

2+ Families/other hsehold	0.335*** (0.093)	0.356*** (0.113)	0.356*** (0.114)	0.335*** (0.091)	0.359*** (0.113)	
Non HRP Human capital (edu yrs)	0.008 (0.005)	0.001 (0.006)	0.001 (0.006)	0.008 (0.005)	0.001 (0.006)	
Non HRP Human capital squared	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	
Number of jobs in the household; 0=1 job						
2 jobs	0.053* (0.032)	0.135*** (0.038)	0.135*** (0.038)	0.053 (0.034)	0.136*** (0.038)	
3+ jobs	-0.050 (0.062)	0.054 (0.069)	0.054 (0.070)	-0.050 (0.066)	0.054 (0.070)	
Non-HRP long-term illness; 0 = none						
Non-HRP previously long-ill	0.079 (0.105)	0.014 (0.105)	0.014 (0.106)	0.079 (0.111)	0.003 (0.105)	0.307* (0.176)
Non-HRP presently long-ill	-0.123*** (0.034)	-0.119*** (0.037)	-0.119*** (0.037)	-0.123*** (0.035)	-0.121*** (0.037)	0.054 (0.047)
Rural (0= Urban)	0.192*** (0.030)	0.173*** (0.032)	0.173*** (0.032)	0.192*** (0.031)	0.174*** (0.032)	
Region						
Wales	0.056 (0.063)	0.039 (0.064)	0.039 (0.068)	0.056 (0.065)	0.044 (0.068)	-0.093 (0.084)
South West	0.035 (0.054)	0.019 (0.054)	0.019 (0.057)	0.035 (0.055)	0.012 (0.057)	0.174* (0.092)
South East	0.249*** (0.047)	0.198*** (0.048)	0.198*** (0.053)	0.249*** (0.053)	0.189*** (0.053)	0.247*** (0.075)
London	0.245*** (0.054)	0.214*** (0.060)	0.214*** (0.062)	0.245*** (0.062)	0.219*** (0.062)	-0.107 (0.081)
East of England	0.085* (0.051)	0.107* (0.055)	0.107* (0.058)	0.085 (0.054)	0.101* (0.057)	0.196** (0.080)
West Midlands	0.074 (0.053)	0.072 (0.053)	0.072 (0.058)	0.074 (0.057)	0.075 (0.057)	-0.034 (0.082)
East Midlands	0.008 (0.054)	0.031 (0.055)	0.031 (0.058)	0.008 (0.056)	0.027 (0.057)	0.107 (0.082)
Yorks and Humbers	0.044 (0.051)	0.081* (0.048)	0.081 (0.054)	0.044 (0.053)	0.084 (0.053)	-0.038 (0.080)
North West	-0.066 (0.049)	-0.035 (0.048)	-0.035 (0.052)	-0.066 (0.051)	-0.034 (0.052)	-0.002 (0.075)
North East	-0.024 (0.065)	-0.038 (0.064)	-0.038 (0.068)	-0.024 (0.064)	-0.035 (0.069)	-0.019 (0.093)
Year; 0 = 2008						
Year 2009	-0.061** (0.028)	-0.063** (0.030)	-0.063** (0.030)	-0.061** (0.028)	-0.063** (0.030)	
Year 2010	-0.045 (0.032)	-0.054 (0.035)	-0.054 (0.035)	-0.045 (0.034)	-0.055 (0.035)	
Dependent Children						0.240*** (0.053)
Dependent Children#Female						-0.711*** (0.073)
HRP Father unemployed						-0.128 (0.104)
HRP Mother unemployed						-0.080** (0.037)
Constant	-2.846*** (0.305)	-2.821*** (0.297)	-2.821*** (0.304)	-2.846*** (0.280)	-2.592*** (0.332)	-2.707*** (0.337)
Observations	9,064	9,064	9,064	9,064	11,599	11,599
R-squared	0.447	0.442	0.442	0.447		
Model p-value	0.000	0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1; Reference groups:

Table A5: Average Treatment effects

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Outcome ihwealthw2	Treatment entrhholdw2	Outcome lnwealthw2	Treatment entrhholdw2	Outcome curtwealthw2	Treatment entrhholdw2
Entrepreneurial household (0 = otherwise)	0.078 (0.126)		0.180 (0.117)		0.082 (0.091)	
HRP father entrepreneur (0 = otherwise)		0.302*** (0.057)		0.306*** (0.058)		0.303*** (0.057)
HRP age (yrs)	0.209*** (0.013)	0.052*** (0.020)	0.200*** (0.014)	0.047** (0.020)	0.165*** (0.012)	0.052*** (0.020)
HRP age squared	-0.002*** (0.000)	-0.000 (0.000)	-0.002*** (0.000)	-0.000 (0.000)	-0.001*** (0.000)	-0.000 (0.000)
HRP Female (0 = Male)	-0.130*** (0.035)	-0.349*** (0.055)	-0.125*** (0.033)	-0.344*** (0.055)	-0.130*** (0.032)	-0.349*** (0.055)
HRP Qualification; 0=No Quals						
HRP other qualifications	0.291*** (0.058)	-0.126* (0.075)	0.355*** (0.059)	-0.112 (0.075)	0.246*** (0.048)	-0.125* (0.075)
HRP Degree qualifications	0.780*** (0.064)	-0.178** (0.084)	0.852*** (0.064)	-0.160* (0.085)	0.782*** (0.056)	-0.177** (0.084)
HRP Industry; 0 = Agri/primary Manufacturing	0.169 (0.155)	-0.998*** (0.225)	0.212 (0.154)	-0.982*** (0.224)	0.170 (0.144)	-0.999*** (0.225)
Utilities	0.325* (0.173)	-1.592*** (0.306)	0.330* (0.175)	-1.578*** (0.305)	0.370** (0.161)	-1.593*** (0.306)
Construction	0.015 (0.155)	0.016 (0.224)	0.034 (0.155)	0.022 (0.223)	0.036 (0.143)	0.015 (0.224)
Retails, repairs and storage	-0.002 (0.154)	-0.828*** (0.224)	0.031 (0.153)	-0.827*** (0.222)	0.038 (0.142)	-0.830*** (0.224)
Hospitality	-0.477*** (0.183)	-0.714*** (0.249)	-0.408** (0.183)	-0.686*** (0.247)	-0.267 (0.163)	-0.716*** (0.248)
ICT	0.367** (0.164)	-0.557** (0.234)	0.398** (0.162)	-0.549** (0.233)	0.382** (0.152)	-0.559** (0.234)
Finance and other prof services	0.252* (0.153)	-0.492** (0.224)	0.255* (0.153)	-0.490** (0.222)	0.308** (0.142)	-0.493** (0.224)
Govt, education and health	0.407*** (0.155)	-1.240*** (0.223)	0.411*** (0.155)	-1.247*** (0.222)	0.426*** (0.144)	-1.241*** (0.223)
Arts and entertainment	0.290* (0.169)	-0.360 (0.248)	0.257 (0.171)	-0.358 (0.247)	0.297* (0.157)	-0.362 (0.248)
Other services	-0.055 (0.174)	-0.171 (0.244)	0.025 (0.169)	-0.193 (0.243)	-0.046 (0.159)	-0.172 (0.244)
Long-term illness; 0 = Never Previously long-ill	-0.073 (0.095)	-0.333* (0.180)	-0.059 (0.093)	-0.322* (0.181)	-0.060 (0.084)	-0.332* (0.180)
Presently long-ill	-0.127*** (0.038)	0.035 (0.053)	-0.134*** (0.037)	0.036 (0.053)	-0.119*** (0.034)	0.035 (0.053)
HRP ethnicity; 0 = White British						
White other	-0.339*** (0.131)	-0.095 (0.135)	-0.227** (0.114)	-0.095 (0.138)	-0.240** (0.117)	-0.096 (0.135)
Mixed	-0.329*** (0.150)	-0.611 (0.416)	-0.337*** (0.151)	-0.611 (0.426)	-0.337*** (0.126)	-0.610 (0.415)
Indian	-0.071 (0.276)	0.289 (0.300)	-0.123 (0.260)	0.307 (0.306)	-0.122 (0.252)	0.290 (0.301)
Pakistani	-0.354 (0.285)	0.819** (0.328)	-0.430 (0.284)	0.843** (0.331)	-0.502* (0.265)	0.819** (0.328)
Bangladeshi	-0.022 (0.403)	0.349 (0.504)	-0.068 (0.461)	0.409 (0.525)	-0.195 (0.356)	0.353 (0.504)
Other Asian	-0.520* (0.269)	0.086 (0.296)	-0.608** (0.287)	0.088 (0.305)	-0.399* (0.235)	0.087 (0.295)
Black Caribbean	-0.210 (0.198)	0.274 (0.207)	-0.031 (0.144)	0.298 (0.210)	-0.214 (0.163)	0.275 (0.207)
Black African	-0.857*** (0.197)	-0.133 (0.272)	-0.751*** (0.181)	-0.062 (0.267)	-0.647*** (0.182)	-0.134 (0.272)
Other black	-1.093 (0.864)	0.329 (0.587)	-1.292 (0.949)	0.277 (0.603)	-0.251 (1.084)	0.324 (0.589)
Chinese	0.583* (0.306)	0.493 (0.428)	0.462 (0.299)	0.505 (0.419)	0.502* (0.277)	0.492 (0.428)
Other ethnicity	-0.498** (0.222)	-0.167 (0.248)	-0.535** (0.236)	-0.160 (0.248)	-0.470** (0.198)	-0.168 (0.248)
HRP Country of birth; 0 = UK						
Other Anglo-saxon countries	0.456*** (0.123)	0.045 (0.164)	0.440*** (0.098)	0.054 (0.165)	0.378*** (0.120)	0.047 (0.164)
Europe	-0.494*** (0.131)	0.240* (0.143)	-0.566*** (0.127)	0.222 (0.146)	-0.394*** (0.113)	0.240* (0.142)

Commonwealth countries	-0.325*** (0.111)	-0.203 (0.153)	-0.360*** (0.111)	-0.218 (0.156)	-0.318*** (0.100)	-0.204 (0.153)
Rest of the world	-0.439*** (0.137)	-0.124 (0.168)	-0.404*** (0.139)	-0.106 (0.168)	-0.423*** (0.126)	-0.124 (0.168)
HRP Religion; 0=Practising Christian Non-practising Christian	0.006 (0.033)	-0.013 (0.052)	0.011 (0.033)	-0.016 (0.052)	0.013 (0.032)	-0.013 (0.052)
Muslim	0.112 (0.238)	0.127 (0.249)	0.090 (0.228)	0.110 (0.252)	0.240 (0.235)	0.126 (0.250)
Jewish	0.271 (0.170)	0.577*** (0.195)	0.203 (0.172)	0.566*** (0.195)	0.332* (0.181)	0.577*** (0.195)
Hindu/ Sikh	0.016 (0.278)	-0.027 (0.288)	0.076 (0.255)	-0.039 (0.296)	0.034 (0.246)	-0.029 (0.289)
Buddhist/ Other	-0.456** (0.178)	0.368* (0.194)	-0.359** (0.142)	0.280 (0.190)	-0.443*** (0.161)	0.368* (0.194)
No religion	-0.137*** (0.045)	0.140** (0.065)	-0.143*** (0.044)	0.126* (0.065)	-0.109*** (0.040)	0.140** (0.065)
HRP/Partner received inheritance (0=Never)	0.200*** (0.035)	0.481*** (0.048)	0.187*** (0.033)	0.473*** (0.048)	0.196*** (0.032)	0.482*** (0.048)
HRP/Partner received lumpsum (0=Never)	0.105*** (0.038)	0.039 (0.059)	0.135*** (0.035)	0.041 (0.059)	0.078** (0.034)	0.040 (0.059)
HRP father qualifications; 0= Degree Further Quals	-0.083 (0.072)	0.011 (0.101)	-0.058 (0.066)	-0.002 (0.101)	-0.113* (0.068)	0.012 (0.101)
Left 17 or 18	-0.045 (0.086)	0.089 (0.119)	-0.012 (0.078)	0.102 (0.119)	-0.042 (0.084)	0.093 (0.119)
Left 15 or 16	-0.118 (0.075)	-0.095 (0.106)	-0.086 (0.067)	-0.100 (0.106)	-0.160** (0.070)	-0.094 (0.106)
Left before 15	-0.154** (0.078)	-0.029 (0.104)	-0.123* (0.070)	-0.031 (0.105)	-0.197*** (0.073)	-0.028 (0.104)
Father no school	-0.272 (0.169)	-0.451* (0.256)	-0.278 (0.176)	-0.474* (0.257)	-0.254* (0.151)	-0.450* (0.255)
HRP no father growing up	-0.249*** (0.085)	0.061 (0.113)	-0.225*** (0.077)	0.047 (0.114)	-0.254*** (0.077)	0.062 (0.112)
HRP mother qualifications; 0= Degree Further Quals	0.066 (0.087)	-0.105 (0.125)	0.047 (0.074)	-0.112 (0.127)	0.101 (0.077)	-0.106 (0.124)
Left 17 or 18	0.076 (0.095)	-0.044 (0.135)	0.023 (0.083)	-0.054 (0.137)	0.122 (0.086)	-0.045 (0.135)
Left 15 or 16	-0.015 (0.087)	0.014 (0.126)	-0.061 (0.074)	0.014 (0.128)	0.038 (0.077)	0.012 (0.126)
Left before 15	-0.013 (0.091)	-0.050 (0.128)	-0.053 (0.077)	-0.058 (0.130)	0.025 (0.080)	-0.051 (0.128)
Mother no school	0.262 (0.170)	0.032 (0.232)	0.236 (0.164)	0.034 (0.234)	0.283* (0.154)	0.031 (0.232)
HRP no mother growing up	-0.141 (0.115)	-0.141 (0.164)	-0.206* (0.107)	-0.135 (0.165)	-0.079 (0.101)	-0.143 (0.164)
HRP number of siblings; 0 = Lone child						
1-4 siblings	-0.069 (0.042)	0.013 (0.062)	-0.083** (0.040)	0.012 (0.062)	-0.069* (0.038)	0.013 (0.062)
5-9 siblings	-0.373*** (0.072)	0.071 (0.098)	-0.379*** (0.071)	0.075 (0.098)	-0.401*** (0.062)	0.071 (0.098)
10+/ Non-family home	-0.508** (0.234)	-0.143 (0.274)	-0.272 (0.205)	-0.134 (0.278)	-0.496** (0.228)	-0.142 (0.274)
HRP growing up home tenure; 0 = Fully owned Mortgage	0.080** (0.037)	-0.023 (0.054)	0.078** (0.035)	-0.031 (0.054)	0.044 (0.034)	-0.023 (0.054)
Renting	-0.187*** (0.041)	-0.017 (0.058)	-0.183*** (0.040)	-0.022 (0.059)	-0.195*** (0.037)	-0.018 (0.058)
Free housing/foster/inst/other	-0.092 (0.093)	-0.123 (0.133)	-0.128 (0.095)	-0.129 (0.134)	-0.076 (0.084)	-0.123 (0.133)
Present household type; 0 = Single under SPA						
Couple under SPA, no kids	0.543*** (0.095)	-0.023 (0.137)	0.560*** (0.090)	-0.041 (0.136)	0.548*** (0.082)	-0.023 (0.136)
Couple, 1 under SPA, no kids	0.629*** (0.101)	0.147 (0.154)	0.617*** (0.096)	0.127 (0.153)	0.582*** (0.103)	0.146 (0.153)
Couple under SPA, dep kids	0.550*** (0.104)	0.244* (0.142)	0.563*** (0.097)	0.220 (0.141)	0.565*** (0.088)	0.242* (0.141)
Couple under SPA, non-dep kids	0.534*** (0.124)	-0.009 (0.172)	0.542*** (0.115)	-0.029 (0.171)	0.535*** (0.111)	-0.012 (0.172)
Lone parent, dep kids	-0.282*** (0.070)	0.218* (0.112)	-0.310*** (0.072)	0.228** (0.112)	-0.165*** (0.058)	0.217* (0.112)
Lone parent, non-dep kids	-0.260** (0.125)	-0.035 (0.174)	-0.191 (0.120)	-0.054 (0.173)	-0.236** (0.103)	-0.036 (0.174)
2+ Families/other hsehold	0.348***	0.168	0.366***	0.158	0.354***	0.167

	(0.132)	(0.176)	(0.117)	(0.176)	(0.113)	(0.175)
Non HRP Human capital (edu yrs)	0.001	-0.007	0.005	-0.007	0.001	-0.007
	(0.007)	(0.010)	(0.007)	(0.010)	(0.006)	(0.010)
Non HRP Human capital squared	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Number of jobs in the household; 0=1 job						
2 jobs	0.208***	0.004	0.162***	0.006	0.135***	0.004
	(0.042)	(0.058)	(0.038)	(0.058)	(0.038)	(0.058)
3+ jobs	0.143**	0.049	0.065	0.051	0.052	0.049
	(0.069)	(0.105)	(0.066)	(0.105)	(0.070)	(0.105)
Non-HRP long-term illness; 0 = none						
Non-HRP previously long-ill	-0.010	-0.284	-0.007	-0.266	0.020	-0.286
	(0.109)	(0.235)	(0.108)	(0.235)	(0.105)	(0.235)
Non-HRP presently long-ill	-0.110***	-0.101*	-0.101***	-0.105*	-0.117***	-0.101*
	(0.039)	(0.057)	(0.035)	(0.057)	(0.037)	(0.057)
Rural (0= Urban)	0.147***	0.216***	0.125***	0.216***	0.170***	0.216***
	(0.033)	(0.049)	(0.032)	(0.049)	(0.032)	(0.049)
Region						
Wales	0.061	0.331***	0.070	0.312***	0.033	0.332***
	(0.072)	(0.114)	(0.070)	(0.114)	(0.068)	(0.114)
South West	0.043	0.101	0.108*	0.083	0.019	0.101
	(0.063)	(0.101)	(0.064)	(0.103)	(0.057)	(0.102)
South East	0.177***	0.050	0.224***	0.045	0.198***	0.051
	(0.057)	(0.086)	(0.059)	(0.086)	(0.053)	(0.086)
London	0.196***	0.183*	0.233***	0.173*	0.212***	0.184*
	(0.067)	(0.096)	(0.067)	(0.097)	(0.062)	(0.096)
East of England	0.123**	0.015	0.194***	0.008	0.108*	0.015
	(0.061)	(0.090)	(0.059)	(0.091)	(0.057)	(0.090)
West Midlands	0.075	-0.001	0.099	-0.011	0.072	-0.001
	(0.061)	(0.097)	(0.062)	(0.096)	(0.057)	(0.097)
East Midlands	0.034	0.069	0.068	0.042	0.030	0.069
	(0.063)	(0.090)	(0.062)	(0.090)	(0.058)	(0.090)
Yorks and Humbers	0.126**	0.057	0.132**	0.052	0.081	0.058
	(0.058)	(0.091)	(0.061)	(0.091)	(0.053)	(0.091)
North West	-0.032	0.044	-0.022	0.033	-0.035	0.043
	(0.058)	(0.088)	(0.060)	(0.087)	(0.052)	(0.088)
North East	-0.019	-0.289**	-0.001	-0.294**	-0.034	-0.288**
	(0.078)	(0.136)	(0.080)	(0.135)	(0.068)	(0.136)
Year; 0 = 2008						
Year 2009	-0.083**	0.050	-0.067**	0.047	-0.064**	0.051
	(0.033)	(0.049)	(0.031)	(0.049)	(0.030)	(0.049)
Year 2010	-0.087**	0.122**	-0.087**	0.107*	-0.057*	0.122**
	(0.038)	(0.056)	(0.038)	(0.056)	(0.034)	(0.056)
Constant	-3.010***	-2.236***	-3.558***	-2.122***	-2.827***	-2.243***
	(0.345)	(0.500)	(0.350)	(0.502)	(0.302)	(0.501)
Observations	9,064	9,064	8,973	8,973	9,064	9,064
Model p-value	0.000	0.000	0.000	0.000	0.000	0.000

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A6: Comparing weighted and unweighted estimates at median wealth

VARIABLES	(1) Weighted	(2) Unweighted	(3) Boot_50	(4) Boot_1000
Entrepreneurial household (0 = otherwise)	-0.033 (0.032)	0.005 (0.033)	0.005 (0.029)	0.005 (0.034)
HRP father entrepreneur (0 = otherwise)	-0.014 (0.033)	0.015 (0.035)	0.015 (0.036)	0.015 (0.035)
HRP mother entrepreneur (0 = otherwise)	0.122 (0.080)	0.071 (0.055)	0.071 (0.059)	0.071 (0.062)
HRP age (yrs)	0.210*** (0.010)	0.214*** (0.011)	0.214*** (0.009)	0.214*** (0.011)
HRP age squared	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)	-0.002*** (0.000)
HRP Female (0 = Male)	-0.115*** (0.027)	-0.116*** (0.028)	-0.116*** (0.029)	-0.116*** (0.030)
HRP Qualification; 0=No Quals HRP other qualifications	0.296*** (0.047)	0.322*** (0.045)	0.322*** (0.045)	0.322*** (0.048)
HRP Degree qualifications	0.733*** (0.050)	0.776*** (0.049)	0.776*** (0.048)	0.776*** (0.054)
HRP Industry; 0 = Agri/primary Manufacturing	0.286 (0.215)	0.280 (0.175)	0.280 (0.188)	0.280 (0.186)
Utilities	0.429** (0.218)	0.435** (0.194)	0.435** (0.195)	0.435** (0.195)
Construction	0.221 (0.216)	0.222 (0.176)	0.222 (0.191)	0.222 (0.190)
Retails, repairs and storage	0.165 (0.215)	0.141 (0.174)	0.141 (0.187)	0.141 (0.187)
Hospitality	-0.172 (0.235)	-0.202 (0.187)	-0.202 (0.221)	-0.202 (0.213)
ICT	0.511** (0.222)	0.455** (0.179)	0.455** (0.197)	0.455** (0.196)
Finance and other prof services	0.411* (0.214)	0.389** (0.175)	0.389** (0.189)	0.389** (0.188)
Govt, education and health	0.527** (0.214)	0.482*** (0.174)	0.482*** (0.185)	0.482** (0.189)
Arts and entertainment	0.408* (0.237)	0.352* (0.188)	0.352* (0.197)	0.352* (0.201)
Other services	0.194 (0.241)	0.115 (0.186)	0.115 (0.201)	0.115 (0.205)
Long-term illness; 0 = Never Previously long-ill	-0.082 (0.072)	-0.137* (0.082)	-0.137* (0.080)	-0.137* (0.079)
Presently long-ill	-0.081*** (0.029)	-0.079*** (0.029)	-0.079*** (0.025)	-0.079*** (0.030)
HRP ethnicity; 0 = White British White other	-0.269** (0.105)	-0.256*** (0.080)	-0.256** (0.105)	-0.256** (0.108)
Mixed	-0.289** (0.118)	-0.340*** (0.128)	-0.340** (0.148)	-0.340** (0.166)
Indian	0.124 (0.134)	0.168 (0.158)	0.168 (0.233)	0.168 (0.216)
Pakistani	-0.133 (0.141)	0.006 (0.195)	0.006 (0.273)	0.006 (0.272)
Bangladeshi	-0.259 (0.219)	0.354 (0.304)	0.354 (0.494)	0.354 (0.476)
Other Asian	-0.364*** (0.113)	-0.330** (0.158)	-0.330 (0.285)	-0.330 (0.255)
Black Caribbean	-0.151 (0.134)	-0.296*** (0.113)	-0.296** (0.129)	-0.296** (0.126)
Black African	-0.844*** (0.208)	-0.911*** (0.135)	-0.911*** (0.234)	-0.911*** (0.217)
Other black	-1.639 (1.224)	-1.923*** (0.429)	-1.923* (1.006)	-1.923** (0.966)
Chinese	0.555 (0.549)	0.677*** (0.236)	0.677* (0.355)	0.677* (0.406)
Other ethnicity	-0.294** (0.122)	-0.286* (0.158)	-0.286* (0.171)	-0.286 (0.180)
HRP Country of birth; 0 = UK Other Anglo-saxon countries	0.318***	0.186*	0.186**	0.186*

	(0.123)	(0.101)	(0.091)	(0.100)
Europe	-0.550***	-0.374***	-0.374***	-0.374***
	(0.114)	(0.086)	(0.120)	(0.112)
Commonwealth countries	-0.333***	-0.273***	-0.273***	-0.273***
	(0.091)	(0.079)	(0.086)	(0.102)
Rest of the world	-0.467***	-0.484***	-0.484***	-0.484***
	(0.078)	(0.092)	(0.151)	(0.140)
HRP Religion; 0=Practising Christian				
Non-practising Christian	0.023	-0.015	-0.015	-0.015
	(0.031)	(0.029)	(0.030)	(0.027)
Muslim	-0.098	-0.201	-0.201	-0.201
	(0.105)	(0.143)	(0.242)	(0.211)
Jewish	0.174	0.236	0.236	0.236*
	(0.116)	(0.144)	(0.154)	(0.131)
Hindu/ Sikh	-0.151	-0.242	-0.242	-0.242
	(0.140)	(0.156)	(0.236)	(0.204)
Buddhist/ Other	-0.565***	-0.433***	-0.433***	-0.433***
	(0.056)	(0.110)	(0.129)	(0.120)
No religion	-0.064*	-0.104***	-0.104***	-0.104***
	(0.039)	(0.036)	(0.037)	(0.039)
HRP/Partner received inherit (0=Never)	0.195***	0.187***	0.187***	0.187***
	(0.026)	(0.027)	(0.023)	(0.029)
HRP/Partner received lumpsum (0=Never)	0.117***	0.071**	0.071***	0.071**
	(0.031)	(0.029)	(0.025)	(0.030)
HRP father qualifications; 0= Degree				
Further Quals	-0.068	-0.011	-0.011	-0.011
	(0.048)	(0.054)	(0.044)	(0.059)
Left 17 or 18	-0.051	-0.011	-0.011	-0.011
	(0.062)	(0.064)	(0.055)	(0.067)
Left 15 or 16	-0.127**	-0.090	-0.090*	-0.090
	(0.051)	(0.055)	(0.049)	(0.059)
Left before 15	-0.121**	-0.087	-0.087*	-0.087
	(0.049)	(0.056)	(0.048)	(0.063)
Father no school	-0.232**	-0.092	-0.092	-0.092
	(0.100)	(0.134)	(0.131)	(0.126)
HRP no father growing up	-0.211***	-0.167***	-0.167***	-0.167***
	(0.062)	(0.059)	(0.048)	(0.064)
HRP mother qualifications; 0= Degree				
Further Quals	0.041	-0.004	-0.004	-0.004
	(0.062)	(0.066)	(0.070)	(0.066)
Left 17 or 18	0.052	-0.007	-0.007	-0.007
	(0.067)	(0.070)	(0.082)	(0.074)
Left 15 or 16	-0.019	-0.052	-0.052	-0.052
	(0.063)	(0.064)	(0.075)	(0.069)
Left before 15	-0.035	-0.094	-0.094	-0.094
	(0.066)	(0.066)	(0.081)	(0.069)
Mother no school	0.194**	-0.021	-0.021	-0.021
	(0.080)	(0.128)	(0.168)	(0.155)
HRP no mother growing up	-0.191**	-0.192**	-0.192*	-0.192*
	(0.094)	(0.085)	(0.107)	(0.098)
HRP number of siblings; 0 = Lone child				
1-4 siblings	-0.046	-0.070**	-0.070**	-0.070**
	(0.035)	(0.034)	(0.035)	(0.036)
5-9 siblings	-0.357***	-0.338***	-0.338***	-0.338***
	(0.060)	(0.056)	(0.065)	(0.066)
10+ Non-family home	-0.648***	-0.561***	-0.561**	-0.561**
	(0.160)	(0.164)	(0.258)	(0.231)
HRP growing up home tenure; 0 = Fully owned				
Mortgage	0.054*	0.008	0.008	0.008
	(0.030)	(0.030)	(0.024)	(0.028)
Renting	-0.161***	-0.234***	-0.234***	-0.234***
	(0.033)	(0.033)	(0.029)	(0.033)
Free housing/foster/inst/other	-0.063	-0.237***	-0.237**	-0.237***
	(0.079)	(0.071)	(0.100)	(0.081)
Present household type; 0 = Single under SPA				
Couple under SPA, no kids	0.540***	0.509***	0.509***	0.509***
	(0.076)	(0.071)	(0.075)	(0.077)
Couple, 1 under SPA, no kids	0.565***	0.493***	0.493***	0.493***
	(0.087)	(0.087)	(0.085)	(0.088)

Couple under SPA, dep kids	0.551*** (0.080)	0.507*** (0.074)	0.507*** (0.089)	0.507*** (0.083)
Couple under SPA, non-dep kids	0.575*** (0.100)	0.483*** (0.095)	0.483*** (0.102)	0.483*** (0.103)
Lone parent, dep kids	-0.367*** (0.078)	-0.331*** (0.053)	-0.331*** (0.068)	-0.331*** (0.068)
Lone parent, non-dep kids	-0.153* (0.091)	-0.240*** (0.092)	-0.240** (0.103)	-0.240** (0.101)
2+ Families/other hsehold	0.415*** (0.092)	0.332*** (0.090)	0.332*** (0.095)	0.332*** (0.096)
Non HRP Human capital (edu yrs)	-0.003 (0.006)	0.003 (0.005)	0.003 (0.006)	0.003 (0.006)
Non HRP Human capital squared	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Number of jobs in the household; 0=1 job				
2 jobs	0.118*** (0.032)	0.078** (0.031)	0.078** (0.030)	0.078** (0.031)
3+ jobs	0.007 (0.054)	-0.017 (0.060)	-0.017 (0.067)	-0.017 (0.060)
Non-HRP long-term illness; 0 = none				
Non-HRP previously long-ill	-0.056 (0.139)	-0.032 (0.102)	-0.032 (0.104)	-0.032 (0.109)
Non-HRP presently long-ill	-0.107*** (0.031)	-0.073** (0.032)	-0.073** (0.034)	-0.073** (0.033)
Rural (0= Urban)	0.106*** (0.030)	0.118*** (0.029)	0.118*** (0.036)	0.118*** (0.030)
Region				
Wales	0.001 (0.076)	0.032 (0.061)	0.032 (0.067)	0.032 (0.073)
South West	0.020 (0.063)	0.052 (0.052)	0.052 (0.067)	0.052 (0.063)
South East	0.181*** (0.059)	0.189*** (0.046)	0.189*** (0.057)	0.189*** (0.058)
London	0.212*** (0.059)	0.213*** (0.053)	0.213*** (0.066)	0.213*** (0.065)
East of England	0.112** (0.056)	0.037 (0.049)	0.037 (0.052)	0.037 (0.059)
West Midlands	-0.005 (0.063)	0.014 (0.051)	0.014 (0.064)	0.014 (0.064)
East Midlands	0.060 (0.059)	0.028 (0.052)	0.028 (0.049)	0.028 (0.060)
Yorks and Humbers	0.047 (0.061)	-0.026 (0.050)	-0.026 (0.065)	-0.026 (0.061)
North West	-0.027 (0.060)	-0.070 (0.048)	-0.070 (0.049)	-0.070 (0.056)
North East	-0.053 (0.069)	-0.017 (0.063)	-0.017 (0.072)	-0.017 (0.079)
Year; 0 = 2008				
Year 2009	-0.074*** (0.025)	-0.078*** (0.027)	-0.078*** (0.029)	-0.078*** (0.029)
Year 2010	-0.090*** (0.032)	-0.109*** (0.031)	-0.109*** (0.034)	-0.109*** (0.035)
Constant	-2.887*** (0.312)	-2.776*** (0.295)	-2.776*** (0.252)	-2.776*** (0.309)
Observations	9,064	9,064	9,064	9,064
Pseudo R-Squared				

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A7: Quantile regression estimates (IHS wealth)

VARIABLES	1 st Percentile		10 th Percentile		25 th Percentile		Median		75 th Percentile		90 th Percentile		95 th Percentile		99 th Percentile	
	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
Entrepreneurial household (0 = otherwise)	-0.323**	-0.414	-0.086	-0.054	0.020	0.020	-0.033	0.005	-0.028	0.028	0.069***	0.089**	0.073*	0.081	0.129*	0.183
HRP father entrepreneur (0 = otherwise)	-	-0.552	0.027	0.028	-0.008	0.048	-0.014	0.015	0.015	0.003	0.062	0.063	0.157**	0.119**	0.299***	0.141
HRP mother entrepreneur (0 = otherwise)	0.537***															
HRP age (yrs)	(0.189)	(0.339)	(0.059)	(0.075)	(0.048)	(0.050)	(0.033)	(0.035)	(0.032)	(0.036)	(0.038)	(0.040)	(0.064)	(0.060)	(0.082)	(0.122)
HRP age squared	-0.605*	0.636	0.056	0.067	0.081	0.015	0.122	0.071	0.137***	0.111*	0.037	0.127**	0.108	0.126	0.111	0.307
HRP Female (0 = Male)	(0.325)	(0.532)	(0.083)	(0.117)	(0.072)	(0.079)	(0.080)	(0.055)	(0.049)	(0.057)	(0.038)	(0.063)	(0.110)	(0.094)	(0.236)	(0.192)
	0.329***	0.292***	0.213***	0.227***	0.208***	0.223***	0.210***	0.214***	0.230***	0.223***	0.211***	0.194***	0.183***	0.180***	0.135***	0.180***
	(0.051)	(0.104)	(0.017)	(0.023)	(0.014)	(0.015)	(0.010)	(0.011)	(0.008)	(0.011)	(0.008)	(0.012)	(0.013)	(0.018)	(0.027)	(0.037)
	-	-0.002*	-	-0.002***	-	-0.002***	-	-0.002***	-	-0.002***	-	-0.001***	-	-0.001***	-	-0.001***
	0.003***		0.002***		0.002***		0.002***		0.002***		0.002***		0.001***		0.001***	
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	-0.196	-0.232	-	-0.290***	-	-0.135***	-	-0.116***	-	-0.110***	-	-0.110***	-	-0.106**	-0.007	-0.073
	(0.134)	(0.269)	0.289***		0.141***		0.115***		0.116***		0.147***		0.127***			
			(0.041)	(0.059)	(0.038)	(0.040)	(0.027)	(0.028)	(0.022)	(0.029)	(0.019)	(0.032)	(0.031)	(0.048)	(0.088)	(0.097)
HRP Qualification; 0=No Quals																
HRP other qualifications	0.313	0.411	0.300***	0.439***	0.368***	0.497***	0.296***	0.322***	0.264***	0.283***	0.180***	0.233***	0.203***	0.252***	-0.164	-0.267*
	(0.231)	(0.433)	(0.100)	(0.095)	(0.074)	(0.064)	(0.047)	(0.045)	(0.049)	(0.047)	(0.043)	(0.052)	(0.041)	(0.077)	(0.186)	(0.156)
HRP Degree qualifications	1.195***	1.301***	0.914***	1.047***	0.902***	1.052***	0.733***	0.776***	0.653***	0.674***	0.549***	0.620***	0.611***	0.654***	0.413**	0.218
	(0.263)	(0.477)	(0.105)	(0.105)	(0.078)	(0.071)	(0.050)	(0.049)	(0.051)	(0.051)	(0.044)	(0.057)	(0.050)	(0.084)	(0.198)	(0.172)
HRP Industry; 0 = Agri/primary Manufacturing	-0.083	-0.448	0.292***	0.288	0.125	0.128	0.286	0.280	0.219	0.289	0.393***	0.368*	0.335**	0.377	0.163	0.185
	(0.977)	(1.699)	(0.108)	(0.375)	(0.116)	(0.252)	(0.215)	(0.175)	(0.135)	(0.183)	(0.090)	(0.202)	(0.144)	(0.301)	(0.727)	(0.614)
Utilities	0.758	-0.525	0.509**	0.666	0.347*	0.331	0.429**	0.435**	0.245	0.426**	0.443***	0.479**	0.281*	0.430	0.203	0.526
	(1.013)	(1.887)	(0.207)	(0.416)	(0.187)	(0.280)	(0.218)	(0.194)	(0.165)	(0.203)	(0.092)	(0.225)	(0.155)	(0.334)	(0.752)	(0.682)
Construction	-0.572	-0.917	0.152	0.223	0.095	0.108	0.221	0.222	0.066	0.114	0.274***	0.204	0.212	0.277	0.190	0.110
	(0.982)	(1.709)	(0.113)	(0.377)	(0.119)	(0.253)	(0.216)	(0.176)	(0.136)	(0.184)	(0.088)	(0.203)	(0.150)	(0.303)	(0.728)	(0.618)
Retails, repairs and storage	-0.447	-0.950	0.061	0.151	-0.048	-0.034	0.165	0.141	0.043	0.126	0.244***	0.192	0.165	0.220	0.145	-0.005
	(0.972)	(1.694)	(0.122)	(0.373)	(0.120)	(0.251)	(0.215)	(0.174)	(0.135)	(0.182)	(0.089)	(0.202)	(0.143)	(0.300)	(0.728)	(0.612)
Hospitality	-1.672*	-2.026	-	-0.438	-	-0.531**	-0.172	-0.202	-0.248*	-0.140	-0.103	-0.000	-0.154	0.089	-0.202	-0.180
	(1.000)	(1.817)	0.782***		0.638***											
			(0.146)	(0.400)	(0.187)	(0.269)	(0.235)	(0.187)	(0.137)	(0.195)	(0.171)	(0.216)	(0.199)	(0.322)	(0.773)	(0.656)
ICT	-0.378	-0.482	0.497***	0.525	0.396***	0.333	0.511**	0.455**	0.459***	0.481**	0.501***	0.432**	0.398***	0.409	0.222	0.324
	(1.028)	(1.743)	(0.117)	(0.384)	(0.118)	(0.258)	(0.222)	(0.179)	(0.141)	(0.187)	(0.089)	(0.207)	(0.153)	(0.309)	(0.731)	(0.630)
Finance and other prof	-0.333	-0.504	0.345***	0.343	0.163	0.196	0.411*	0.389**	0.362***	0.421**	0.581***	0.536***	0.491***	0.562*	0.305	0.240

services	(0.961)	(1.696)	(0.106)	(0.374)	(0.119)	(0.251)	(0.214)	(0.175)	(0.136)	(0.182)	(0.090)	(0.202)	(0.144)	(0.300)	(0.727)	(0.613)
Govt, education and health	0.090	-0.222	0.656***	0.659*	0.389***	0.340	0.527**	0.482***	0.401***	0.421**	0.542***	0.457**	0.451***	0.477	0.353	0.307
Arts and entertainment	(0.961)	(1.693)	(0.103)	(0.373)	(0.118)	(0.251)	(0.214)	(0.174)	(0.133)	(0.182)	(0.089)	(0.202)	(0.144)	(0.300)	(0.728)	(0.612)
	-0.556	-0.443	0.579***	0.479	0.297**	0.140	0.408*	0.352*	0.280*	0.349*	0.402***	0.294	0.232	0.343	0.304	0.509
Other services	(0.982)	(1.827)	(0.213)	(0.403)	(0.131)	(0.271)	(0.237)	(0.188)	(0.164)	(0.196)	(0.090)	(0.217)	(0.171)	(0.324)	(0.800)	(0.660)
	-1.114	-2.001	0.071	0.160	-0.205	-0.214	0.194	0.115	0.115	0.097	0.335**	0.202	0.142	0.293	-0.088	-0.244
	(0.992)	(1.806)	(0.274)	(0.398)	(0.171)	(0.268)	(0.241)	(0.186)	(0.150)	(0.194)	(0.157)	(0.215)	(0.152)	(0.320)	(0.771)	(0.652)
Long-term illness; 0 = Never																
Previously long-ill	0.738	0.779	-0.056	-0.097	-0.050	0.012	-0.082	-0.137*	-0.148**	-0.139	-0.092*	-0.130	-	-0.016	0.164	0.492*
													0.156***			
Presently long-ill	(0.793)	(0.798)	(0.118)	(0.176)	(0.072)	(0.118)	(0.072)	(0.082)	(0.063)	(0.086)	(0.048)	(0.095)	(0.051)	(0.141)	(0.133)	(0.288)
	-0.313*	-0.106	-	-0.192***	-	-0.129***	-	-0.079***	-0.038	-0.051*	-	-0.115***	-	-0.111**	-	-0.129
			0.160***		0.118***		0.081***				0.082***		0.096***		0.245***	
HRP ethnicity; 0 = White British	(0.178)	(0.280)	(0.047)	(0.062)	(0.032)	(0.042)	(0.029)	(0.029)	(0.027)	(0.030)	(0.020)	(0.033)	(0.026)	(0.050)	(0.061)	(0.101)
White other	-1.020**	-1.498*	-	-0.441**	-	-0.375***	-0.269**	-0.256***	-0.227**	-0.135	0.065	-0.006	0.027	-0.017	-0.082	0.133
			0.602***		0.361***											
Mixed	(0.472)	(0.779)	(0.112)	(0.172)	(0.120)	(0.116)	(0.105)	(0.080)	(0.106)	(0.084)	(0.081)	(0.093)	(0.068)	(0.138)	(0.195)	(0.281)
	-0.166	0.115	-0.233	-0.369	-	-0.398**	-0.289**	-0.340***	-0.170	-0.285**	-	-0.362**	-	-0.258	-0.647**	-0.777*
					0.448***						0.420***		0.410***			
Indian	(1.113)	(1.242)	(0.207)	(0.274)	(0.082)	(0.184)	(0.118)	(0.128)	(0.144)	(0.133)	(0.054)	(0.148)	(0.143)	(0.220)	(0.276)	(0.449)
	-1.333	0.661	-0.477**	-0.422	0.172	0.166	0.124	0.168	0.231	0.226	0.085	0.066	-0.010	0.095	-0.225	-0.632
Pakistani	(2.384)	(1.536)	(0.192)	(0.338)	(0.331)	(0.228)	(0.134)	(0.158)	(0.216)	(0.165)	(0.302)	(0.183)	(0.329)	(0.272)	(1.547)	(0.555)
	0.984	1.393	-0.212	0.025	-0.419	0.223	-0.133	0.006	-0.161	-0.158	-0.330	-0.076	-	-0.817**	-1.510	-0.635
													0.932***			
Bangladeshi	(1.787)	(1.892)	(0.490)	(0.417)	(0.303)	(0.281)	(0.141)	(0.195)	(0.196)	(0.203)	(0.502)	(0.225)	(0.219)	(0.335)	(1.268)	(0.684)
	1.048	2.915	1.078	0.794	0.465	0.336	-0.259	0.354	-0.055	-0.078	0.172	0.378	-0.522	0.078	-0.690	-0.062
Other Asian	(2.888)	(2.950)	(1.029)	(0.650)	(0.530)	(0.437)	(0.219)	(0.304)	(0.218)	(0.317)	(2.091)	(0.351)	(0.377)	(0.523)	(1.362)	(1.066)
	-0.174	0.456	-	-1.417***	-0.327	-0.728***	-	-0.330**	0.030	-0.078	-0.220	0.048	-0.184	-0.046	0.245	0.106
			1.442***				0.364***									
Black Caribbean	(1.239)	(1.533)	(0.430)	(0.338)	(0.379)	(0.227)	(0.113)	(0.158)	(0.185)	(0.165)	(0.243)	(0.183)	(0.175)	(0.272)	(1.582)	(0.554)
	-1.499	-3.025***	-0.270**	-0.302	-0.075	-0.367**	-0.151	-0.296***	-0.124	-0.288**	-0.116**	-0.188	-0.099	-0.227	-0.354	-0.739*
Black African	(1.569)	(1.097)	(0.135)	(0.242)	(0.124)	(0.163)	(0.134)	(0.113)	(0.123)	(0.118)	(0.051)	(0.131)	(0.181)	(0.194)	(0.217)	(0.396)
	-1.816*	-2.054	-1.069*	-1.151***	-	-0.996***	-	-0.911***	-	-0.810***	-0.512	-0.554***	-0.307	0.011	0.228	0.280
					0.692***		0.844***		0.830***							
Other black	(1.038)	(1.310)	(0.620)	(0.289)	(0.216)	(0.194)	(0.208)	(0.135)	(0.086)	(0.141)	(0.480)	(0.156)	(0.739)	(0.232)	(0.493)	(0.473)
	-0.291	0.722	-1.661	-0.595	-1.931	-1.557**	-1.639	-1.923***	-0.560	-0.762*	0.767	0.351	0.620	0.311	-0.125	-0.703
Chinese	(5.688)	(4.166)	(0.000)	(0.918)	(1.240)	(0.618)	(1.224)	(0.429)	(5.221)	(0.448)	(1.491)	(0.496)	(0.864)	(0.738)	(0.000)	(1.505)
	1.381	0.910	0.895***	0.625	1.085***	0.198	0.555	0.677***	0.380**	0.562**	0.333	0.353	0.028	0.672*	0.613	0.626
Other ethnicity	(4.148)	(2.289)	(0.249)	(0.504)	(0.314)	(0.339)	(0.549)	(0.236)	(0.169)	(0.246)	(0.618)	(0.272)	(0.281)	(0.405)	(0.701)	(0.827)
	-0.224	-0.041	-0.511	-0.546	-0.121	-0.390*	-0.294**	-0.286*	-0.390	-0.302*	-0.338**	-0.261	-0.231*	-0.182	-0.722	0.629
	(0.944)	(1.532)	(0.474)	(0.338)	(0.300)	(0.227)	(0.122)	(0.158)	(0.756)	(0.165)	(0.147)	(0.182)	(0.133)	(0.271)	(0.918)	(0.553)
HRP Country of birth; 0 = UK																
Other Anglo-saxon	1.173**	0.815	0.606***	0.326	0.461***	0.356**	0.318***	0.186*	0.410***	0.305***	0.240***	0.190	0.076	0.169	0.345	0.269

countries																
Europe	(0.583) -0.417	(0.984) -0.501	(0.085) -	(0.217) -0.689***	(0.053) -	(0.146) -0.579***	(0.123) -	(0.101) -0.374***	(0.050) -0.265**	(0.106) -0.152*	(0.063) -	(0.117) -0.107	(0.100) -	(0.174) -0.215	(0.333) -0.246	(0.355) -0.610**
Commonwealth countries	(0.411) -0.036	(0.840) -1.109	(0.104) -	(0.185) -0.710***	(0.226) -	(0.125) -0.416***	(0.114) -	(0.086) -0.273***	(0.116) -0.224**	(0.090) -0.138*	(0.037) -0.134*	(0.100) -0.058	(0.119) -0.208**	(0.149) -0.160	(0.621) -0.042	(0.304) 0.033
Rest of the world	(1.018) 0.655	(0.765) 0.098	(0.105) -	(0.169) -0.571***	(0.110) -	(0.113) -0.645***	(0.091) -	(0.079) -0.484***	(0.092) -0.304*	(0.082) -0.304***	(0.071) -0.122	(0.091) -0.253**	(0.096) -	(0.135) -0.280*	(0.170) -0.123	(0.276) -0.226
HRP Religion; 0=Practising Christian Non-practising Christian	(0.780) -0.025	(0.898) 0.171	(0.149) 0.089***	(0.198) 0.036	(0.202) 0.014	(0.133) -0.001	(0.078) 0.023	(0.092) -0.015	(0.168) 0.016	(0.097) 0.008	(0.080) -0.016	(0.107) -0.021	(0.063) 0.035	(0.159) 0.001	(0.568) 0.021	(0.324) -0.048
Muslim	(0.164) -0.472	(0.281) 0.224	(0.033) -0.024	(0.062) -0.096	(0.036) 0.100	(0.042) -0.159	(0.031) -0.098	(0.029) -0.201	(0.028) -0.124	(0.030) -0.144	(0.016) -0.047	(0.033) -0.215	(0.028) 0.658***	(0.050) 0.540**	(0.060) 0.712	(0.102) 0.257
Jewish	(1.617) 1.091**	(1.392) 0.698	(0.315) -0.012	(0.307) 0.172	(0.283) 0.360	(0.206) 0.307	(0.105) 0.174	(0.143) 0.236	(0.185) 0.243	(0.150) 0.206	(0.420) 0.240*	(0.166) 0.050	(0.169) 0.118	(0.247) 0.015	(1.294) 0.075	(0.503) -0.101
Hindu/ Sikh	(0.430) 0.529	(1.398) -1.104	(0.116) 0.378*	(0.308) 0.377	(0.359) 0.125	(0.207) 0.087	(0.116) -0.151	(0.144) -0.242	(0.378) -0.173	(0.150) -0.279*	(0.141) -0.105	(0.166) -0.181	(0.142) 0.077	(0.248) 0.082	(1.289) -0.009	(0.505) 0.504
Buddhist/ Other	(1.733) -1.323*	(1.513) -1.292	(0.204) -0.302	(0.333) -0.367	(0.319) -0.381**	(0.224) -0.286*	(0.140) -	(0.156) -0.433***	(0.174) -	(0.163) -0.380***	(0.301) -0.384	(0.180) -0.486***	(0.262) 0.004	(0.268) -0.210	(1.519) -0.494	(0.546) -0.484
No religion	(0.787) -0.379**	(1.071) -0.253	(0.451) -	(0.236) -0.215***	(0.191) -0.080*	(0.159) -0.113**	(0.056) -0.064*	(0.110) -0.104***	(0.120) -	(0.115) -0.085**	(0.267) -	(0.127) -0.118***	(0.099) -0.013	(0.190) -0.049	(0.312) -0.128*	(0.387) -0.201
HRP/Partner received inherit (0=Never)	(0.185) 0.239**	(0.346) 0.418	(0.062) 0.314***	(0.076) 0.317***	(0.042) 0.165***	(0.051) 0.196***	(0.039) 0.195***	(0.036) 0.187***	(0.032) 0.170***	(0.037) 0.145***	(0.025) 0.131***	(0.041) 0.147***	(0.034) 0.145***	(0.061) 0.140***	(0.070) 0.053	(0.125) 0.051
HRP/Partner received lumpsum (0=Never)	(0.118) -0.090	(0.266) -0.065	(0.046) 0.213***	(0.059) 0.142**	(0.030) 0.120***	(0.039) 0.106**	(0.026) 0.117***	(0.027) 0.071**	(0.022) 0.084***	(0.029) 0.043	(0.020) 0.021	(0.032) 0.039	(0.029) 0.033	(0.047) 0.024	(0.059) 0.146**	(0.096) -0.001
HRP father qualifications; 0= Degree	(0.207) -0.209	(0.285) 0.269	(0.039) 0.074	(0.063) 0.017	(0.038) 0.029	(0.042) 0.051	(0.031) -0.068	(0.029) -0.011	(0.026) -0.072*	(0.031) -0.063	(0.019) -	(0.034) -0.190***	(0.036) -	(0.051) -0.220**	(0.064) -	(0.103) -0.451**
Further Quals	(0.305) -0.622	(0.522) -0.195	(0.079) 0.035	(0.115) -0.038	(0.066) 0.071	(0.077) 0.027	(0.048) -0.051	(0.054) -0.011	(0.042) -0.046	(0.056) -0.021	(0.037) -0.039	(0.062) -0.086	(0.093) -0.109	(0.092) 0.008	(0.119) -0.058	(0.189) -0.174
Left 17 or 18	(0.400) -0.275	(0.618) 0.232	(0.090) 0.003	(0.136) -0.014	(0.066) -0.041	(0.092) -0.011	(0.062) -0.127**	(0.064) -0.090	(0.056) -0.094**	(0.066) -0.079	(0.046) -	(0.074) -0.214***	(0.112) -	(0.109) -0.210**	(0.325) -	(0.223) -0.487**
Left 15 or 16	(0.265) -0.566**	(0.530) 0.013	(0.074) -0.045	(0.117) -0.096	(0.068) -0.047	(0.079) -0.048	(0.051) -0.121**	(0.055) -0.087	(0.042) -	(0.057) -0.124**	(0.038) -	(0.063) -0.234***	(0.092) -0.238**	(0.094) -0.221**	(0.134) -0.349**	(0.192) -0.513***
Left before 15	(0.269) -0.503	(0.543) 0.510	(0.078) -0.480	(0.120) 0.118	(0.069) -0.313**	(0.081) -0.100	(0.049) -0.232**	(0.056) -0.092	(0.043) -0.106	(0.058) -0.232*	(0.038) -	(0.065) -0.119	(0.093) -0.197	(0.096) -0.120	(0.136) 0.251	(0.196) -0.338
Father no school																

HRP no father growing up	(1.242) - 1.154*** (0.294)	(1.306) -0.155 (0.578)	(0.360) - 0.224*** (0.077)	(0.288) -0.264** (0.127)	(0.123) -0.165** (0.079)	(0.194) -0.140 (0.086)	(0.100) - 0.211*** (0.062)	(0.134) -0.167*** (0.059)	(0.067) - 0.189*** (0.052)	(0.140) -0.169*** (0.062)	0.356*** (0.083) - 0.181*** (0.046)	(0.155) -0.211*** (0.069)	(0.227) - 0.249*** (0.093)	(0.231) -0.216** (0.102)	(0.290) - 0.481*** (0.133)	(0.472) -0.660*** (0.209)
HRP mother qualifications; 0= Degree Further Quals	1.176** (0.543)	-0.658 (0.637)	0.123 (0.092)	0.132 (0.140)	0.001 (0.095)	-0.013 (0.094)	0.041 (0.062)	-0.004 (0.066)	-0.031 (0.069)	-0.074 (0.069)	0.125** (0.051)	0.077 (0.076)	0.142* (0.081)	0.071 (0.113)	0.096 (0.143)	0.118 (0.230)
Left 17 or 18	1.372** (0.578)	0.302 (0.679)	-0.003 (0.095)	0.132 (0.150)	0.027 (0.096)	0.028 (0.101)	0.052 (0.067)	-0.007 (0.070)	0.002 (0.072)	-0.081 (0.073)	0.022 (0.054)	0.077 (0.081)	0.043 (0.088)	0.072 (0.120)	0.125 (0.178)	0.201 (0.245)
Left 15 or 16	1.669*** (0.545)	-0.048 (0.619)	-0.116 (0.088)	-0.022 (0.137)	-0.108 (0.093)	-0.082 (0.092)	-0.019 (0.063)	-0.052 (0.064)	-0.083 (0.068)	-0.180*** (0.067)	0.035 (0.049)	0.014 (0.074)	0.065 (0.074)	0.032 (0.110)	0.193 (0.153)	0.183 (0.224)
Left before 15	1.534*** (0.545)	-0.247 (0.644)	-0.084 (0.093)	0.013 (0.142)	-0.094 (0.094)	-0.095 (0.095)	-0.035 (0.066)	-0.094 (0.066)	-0.063 (0.069)	-0.172** (0.069)	0.057 (0.049)	0.014 (0.077)	0.074 (0.078)	0.054 (0.114)	0.150 (0.155)	0.228 (0.233)
Mother no school	2.356* (1.233)	0.400 (1.248)	0.297 (0.271)	0.154 (0.275)	0.321* (0.173)	0.011 (0.185)	0.194** (0.080)	-0.021 (0.128)	0.099 (0.138)	-0.053 (0.134)	0.154 (0.134)	-0.102 (0.149)	0.186* (0.113)	-0.090 (0.221)	-0.060 (0.278)	0.055 (0.451)
HRP no mother growing up	1.905*** (0.599)	0.257 (0.824)	-0.368** (0.171)	-0.355* (0.182)	- (0.380*** (0.141)	-0.363*** (0.122)	-0.191** (0.094)	-0.192** (0.085)	-0.122 (0.091)	-0.185** (0.089)	-0.010 (0.079)	-0.037 (0.098)	0.088 (0.112)	0.047 (0.146)	0.299 (0.187)	0.389 (0.298)
HRP number of siblings; 0 = Lone child 1-4 siblings	-0.065 (0.180)	0.068 (0.331)	-0.008 (0.054)	-0.008 (0.073)	- (0.113*** (0.031)	-0.108** (0.049)	-0.046 (0.035)	-0.070** (0.034)	-0.076** (0.032)	-0.077** (0.036)	- (0.121*** (0.025)	-0.127*** (0.039)	-0.089** (0.045)	-0.126** (0.059)	-0.088 (0.077)	-0.045 (0.120)
5-9 siblings	- (0.503)	-1.404** (0.545)	- (0.064)	-0.499*** (0.120)	- (0.456*** (0.059)	-0.450*** (0.081)	- (0.357*** (0.060)	-0.338*** (0.056)	- (0.258*** (0.051)	-0.287*** (0.059)	- (0.329*** (0.054)	-0.272*** (0.065)	- (0.064)	-0.262*** (0.097)	- (0.094)	-0.526*** (0.197)
10+ Non-family home	-1.758** (0.763)	-2.000 (1.590)	0.131 (0.789)	-1.096*** (0.350)	- (0.330*** (0.103)	-0.257 (0.236)	-0.561*** (0.160)	-0.461** (0.164)	-0.458*** (0.196)	-0.458*** (0.171)	-0.084 (0.832)	-0.035 (0.189)	0.183* (0.106)	0.094 (0.282)	-0.196 (0.538)	-0.199 (0.574)
HRP growing up home tenure; 0 = Fully owned Mortgage	0.119 (0.157)	0.103 (0.292)	0.143*** (0.044)	0.103 (0.064)	0.093** (0.037)	0.053 (0.043)	0.054* (0.030)	0.008 (0.030)	0.052** (0.024)	0.005 (0.031)	-0.014 (0.021)	-0.065* (0.035)	-0.043 (0.042)	-0.076 (0.052)	-0.014 (0.075)	-0.060 (0.105)
Renting	-0.328** (0.147)	-0.442 (0.319)	- (0.051)	-0.260*** (0.070)	- (0.167*** (0.043)	-0.246*** (0.047)	- (0.161*** (0.033)	-0.234*** (0.033)	- (0.169*** (0.031)	-0.175*** (0.034)	- (0.183*** (0.024)	-0.226*** (0.038)	- (0.229*** (0.041)	-0.289*** (0.057)	- (0.084)	-0.220* (0.115)
Free housing/foster/inst/other	-0.396 (0.285)	-0.293 (0.695)	-0.190** (0.079)	-0.191 (0.153)	-0.071 (0.089)	-0.244** (0.103)	-0.063 (0.079)	-0.237*** (0.071)	-0.138** (0.061)	-0.227*** (0.075)	-0.154* (0.086)	-0.185** (0.083)	-0.127** (0.059)	-0.264** (0.123)	-0.367** (0.144)	-0.355 (0.251)
Present household type; 0 = Single under SPA	0.859*** (0.307)	0.942 (0.685)	0.914*** (0.117)	0.851*** (0.151)	0.567*** (0.098)	0.551*** (0.102)	0.540*** (0.076)	0.509*** (0.071)	0.549*** (0.068)	0.472*** (0.074)	0.449*** (0.064)	0.366*** (0.082)	0.317*** (0.078)	0.349*** (0.121)	0.453** (0.192)	0.287 (0.248)
Couple under SPA, no kids	1.935*** (0.307)	1.424* (0.685)	1.053*** (0.117)	0.962*** (0.151)	0.616*** (0.098)	0.574*** (0.102)	0.565*** (0.076)	0.493*** (0.071)	0.573*** (0.068)	0.456*** (0.074)	0.297*** (0.064)	0.154 (0.082)	0.110 (0.078)	0.087 (0.121)	0.400* (0.192)	0.111 (0.248)
Couple, 1 under SPA, no kids																

Couple under SPA, dep kids	(0.342) 0.762***	(0.847) 0.944	(0.122) 0.965***	(0.187) 0.888***	(0.100) 0.574***	(0.126) 0.567***	(0.087) 0.551***	(0.087) 0.507***	(0.077) 0.574***	(0.091) 0.485***	(0.066) 0.424***	(0.101) 0.375***	(0.080) 0.242***	(0.150) 0.272**	(0.209) 0.330*	(0.306) 0.039
Couple under SPA, non-dep kids	(0.257) 1.160***	(0.715) 1.207	(0.125) 0.911***	(0.158) 0.850***	(0.103) 0.570***	(0.106) 0.523***	(0.080) 0.575***	(0.074) 0.483***	(0.074) 0.510***	(0.077) 0.383***	(0.069) 0.329***	(0.085) 0.204*	(0.086) 0.014	(0.127) 0.028	(0.195) -0.057	(0.258) -0.245
Lone parent, dep kids	(0.294) -0.042	(0.927) 0.477	(0.145) -0.014	(0.204) -0.112	(0.116) -	(0.137) -0.413***	(0.100) -	(0.095) -0.331***	(0.093) -	(0.100) -0.275***	(0.086) -	(0.110) -0.219***	(0.103) -	(0.164) -0.248***	(0.244) -0.296**	(0.335) -0.379**
Lone parent, non-dep kids	(0.248) -0.291	(0.516) -0.397	(0.103) -0.415*	(0.114) -0.415**	(0.087) -0.257	(0.077) -0.184	(0.078) -0.153*	(0.053) -0.240***	(0.058) -0.157	(0.056) -0.196**	(0.050) -0.141*	(0.061) -0.216**	(0.060) -	(0.091) -0.195	(0.139) -0.256	(0.187) -0.539*
2+ Families/other hsehold	(0.463) 0.197	(0.892) 0.481	(0.236) 0.368**	(0.197) 0.427**	(0.170) 0.391***	(0.132) 0.400***	(0.091) 0.415***	(0.092) 0.332***	(0.097) 0.450***	(0.096) 0.322***	(0.085) 0.402***	(0.106) 0.217**	(0.097) 0.139	(0.158) 0.132	(0.362) 0.337	(0.322) 0.077
Non HRP Human capital (edu yrs)	(0.348) -0.020	(0.873) 0.014	(0.151) 0.004	(0.192) 0.007	(0.131) 0.005	(0.129) 0.007	(0.092) -0.003	(0.090) 0.003	(0.098) -0.003	(0.094) 0.004	(0.085) 0.001	(0.104) 0.010*	(0.112) 0.017***	(0.155) 0.018*	(0.249) 0.019	(0.315) 0.040**
Non HRP Human capital squared	(0.015) 0.000	(0.051) -0.000	(0.008) 0.000	(0.011) 0.000	(0.007) 0.000	(0.008) -0.000	(0.006) 0.000	(0.005) 0.000	(0.005) 0.000	(0.005) 0.000	(0.005) 0.000*	(0.006) -0.000	(0.006) -0.000	(0.009) -0.000	(0.016) -0.000	(0.018) -0.001*
Number of jobs in the household; 0=1 job	(0.000) 0.878***	(0.001) 0.566*	(0.000) 0.309***	(0.000) 0.214***	(0.000) 0.213***	(0.000) 0.137***	(0.000) 0.118***	(0.000) 0.078**	(0.000) 0.064**	(0.000) 0.004	(0.000) 0.036	(0.000) -0.006	(0.000) 0.011	(0.000) -0.017	(0.000) -0.061	(0.000) -0.125
2 jobs	(0.180) 0.878***	(0.299) 0.566*	(0.057) 0.309***	(0.066) 0.214***	(0.038) 0.213***	(0.044) 0.137***	(0.032) 0.118***	(0.031) 0.078**	(0.031) 0.064**	(0.032) 0.004	(0.022) 0.036	(0.036) -0.006	(0.039) 0.011	(0.053) -0.017	(0.076) -0.061	(0.108) -0.125
3+ jobs	(0.180) 1.358***	(0.299) 0.622	(0.057) 0.232***	(0.066) 0.109	(0.038) 0.076	(0.044) -0.020	(0.032) 0.007	(0.031) -0.017	(0.031) 0.015	(0.032) -0.051	(0.022) -	(0.036) -0.161**	(0.039) -	(0.053) -0.106	(0.076) -0.196	(0.108) -0.198
Non-HRP long-term illness; 0 = none	(0.257) 0.170	(0.583) -0.544	(0.087) 0.008	(0.128) 0.056	(0.065) 0.059	(0.086) -0.005	(0.054) -0.056	(0.060) -0.032	(0.048) -0.167*	(0.063) 0.108	(0.038) 0.277	(0.069) 0.357***	(0.054) 0.315***	(0.103) 0.323*	(0.139) 0.186	(0.210) 0.336
Non-HRP previously long-ill	(0.588) 0.170	(0.992) -0.544	(0.202) 0.008	(0.219) 0.056	(0.054) 0.059	(0.147) -0.005	(0.139) -0.056	(0.102) -0.032	(0.099) -0.167*	(0.107) 0.108	(0.362) 0.277	(0.118) 0.357***	(0.072) 0.315***	(0.176) 0.323*	(0.214) 0.186	(0.358) 0.336
Non-HRP presently long-ill	(0.588) 0.428***	(0.992) -0.285	(0.202) 0.180***	(0.219) -0.193***	(0.054) 0.156***	(0.147) -0.160***	(0.139) 0.107***	(0.102) -0.073**	(0.099) -0.064**	(0.107) -0.065*	(0.362) 0.077***	(0.118) -0.034	(0.072) -0.056**	(0.176) -0.099*	(0.214) -0.125	(0.358) -0.132
Rural (0= Urban)	(0.161) 0.368**	(0.316) 0.302	(0.048) 0.244***	(0.070) 0.239***	(0.036) 0.139***	(0.047) 0.138***	(0.031) 0.106***	(0.032) 0.118***	(0.028) 0.173***	(0.034) 0.172***	(0.021) 0.172***	(0.038) 0.177***	(0.027) 0.138***	(0.056) 0.131***	(0.076) -0.020	(0.114) 0.019
Region	(0.157) 0.107	(0.279) 0.145	(0.040) 0.028	(0.061) 0.122	(0.031) 0.033	(0.041) 0.068	(0.030) 0.001	(0.029) 0.032	(0.028) 0.008	(0.030) 0.039	(0.021) 0.084	(0.033) 0.048	(0.031) 0.102	(0.049) 0.124	(0.069) 0.612***	(0.101) 0.289
Wales	(0.260) -0.465*	(0.591) -0.089	(0.099) 0.012	(0.130) 0.050	(0.085) 0.076	(0.088) 0.038	(0.076) 0.020	(0.061) 0.052	(0.054) -0.038	(0.064) 0.043	(0.072) 0.052	(0.070) 0.064	(0.069) 0.090	(0.105) 0.075	(0.181) 0.274*	(0.214) 0.054
South West	(0.266) 0.014	(0.508) 0.185	(0.097) 0.212***	(0.112) 0.263***	(0.061) 0.135***	(0.075) 0.181***	(0.063) 0.181***	(0.052) 0.189***	(0.043) 0.191***	(0.055) 0.206***	(0.039) 0.226***	(0.060) 0.186***	(0.063) 0.252***	(0.090) 0.231***	(0.145) 0.323***	(0.183) 0.289*
South East	(0.242) -0.119	(0.445) -0.023	(0.066) 0.163**	(0.098) 0.161	(0.045) 0.174***	(0.066) 0.156**	(0.059) 0.212***	(0.046) 0.213***	(0.037) 0.233***	(0.048) 0.279***	(0.035) 0.332***	(0.053) 0.302***	(0.064) 0.273***	(0.079) 0.302***	(0.096) 0.365***	(0.161) 0.401**
London	(0.278) -	(0.511) -0.312	(0.078) 0.120	(0.113) 0.160	(0.059) 0.166***	(0.076) 0.090	(0.059) 0.112**	(0.053) 0.037	(0.048) 0.074*	(0.055) 0.091*	(0.042) 0.126***	(0.061) 0.055	(0.057) 0.107**	(0.091) 0.123	(0.110) 0.497***	(0.185) 0.304*
East of England	-	-0.312	0.120	0.160	0.166***	0.090	0.112**	0.037	0.074*	0.091*	0.126***	0.055	0.107**	0.123	0.497***	0.304*

	0.617***															
	(0.219)	(0.480)	(0.084)	(0.106)	(0.064)	(0.071)	(0.056)	(0.049)	(0.041)	(0.052)	(0.032)	(0.057)	(0.053)	(0.085)	(0.122)	(0.174)
West Midlands	-0.348	0.061	0.182**	0.179	0.057	0.021	-0.005	0.014	0.011	0.066	0.044	0.029	0.134	0.084	0.385***	0.313*
	(0.245)	(0.497)	(0.074)	(0.110)	(0.049)	(0.074)	(0.063)	(0.051)	(0.041)	(0.053)	(0.041)	(0.059)	(0.082)	(0.088)	(0.140)	(0.180)
East Midlands	-0.661**	-0.482	0.024	0.036	-0.010	-0.022	0.060	0.028	-0.012	-0.006	0.024	-0.016	0.028	-0.019	0.389***	0.300
	(0.279)	(0.506)	(0.072)	(0.112)	(0.084)	(0.075)	(0.059)	(0.052)	(0.040)	(0.054)	(0.033)	(0.060)	(0.048)	(0.090)	(0.126)	(0.183)
Yorks and Humbers	0.195	0.355	0.122	0.136	0.108**	0.029	0.047	-0.026	0.023	0.025	0.111***	0.039	0.043	0.042	0.166*	0.189
	(0.257)	(0.483)	(0.078)	(0.107)	(0.046)	(0.072)	(0.061)	(0.050)	(0.050)	(0.052)	(0.034)	(0.058)	(0.050)	(0.086)	(0.098)	(0.175)
North West	-	-0.693	-0.078	-0.041	-0.079	-0.096	-0.027	-0.070	0.014	0.009	0.072**	-0.012	0.024	-0.027	0.069	-0.002
	0.687***															
	(0.254)	(0.466)	(0.060)	(0.103)	(0.056)	(0.069)	(0.060)	(0.048)	(0.046)	(0.050)	(0.031)	(0.055)	(0.049)	(0.082)	(0.120)	(0.168)
North East	0.126	0.041	-0.175**	-0.177	-0.097	-0.056	-0.053	-0.017	0.011	0.039	0.095*	0.029	0.039	0.025	0.263*	0.246
	(0.280)	(0.608)	(0.073)	(0.134)	(0.100)	(0.090)	(0.069)	(0.063)	(0.051)	(0.065)	(0.050)	(0.072)	(0.055)	(0.108)	(0.140)	(0.220)
Year; 0 = 2008																
Year 2009	-0.067	0.023	-	-0.105*	-0.075**	-0.080**	-	-0.078***	-0.040	-0.060**	-	-0.047	-0.054**	-0.018	-0.047	0.120
			0.148***				0.074***				0.101***					
	(0.122)	(0.261)	(0.038)	(0.058)	(0.031)	(0.039)	(0.025)	(0.027)	(0.024)	(0.028)	(0.018)	(0.031)	(0.024)	(0.046)	(0.055)	(0.094)
Year 2010	-0.076	-0.049	-	-0.059	-0.084**	-0.101**	-	-0.109***	-0.046	-0.053	-0.056**	-0.023	-0.023	0.056	0.115	0.333***
			0.131***				0.090***									
	(0.170)	(0.303)	(0.050)	(0.067)	(0.036)	(0.045)	(0.032)	(0.031)	(0.029)	(0.033)	(0.022)	(0.036)	(0.038)	(0.054)	(0.076)	(0.109)
Constant	-	-8.620***	-	-5.543***	-	-3.922***	-	-2.776***	-	-2.239***	-	-1.130***	-0.706**	-0.640	0.913	0.457
	9.786***		5.229***		3.648***		2.887***		2.526***		1.590***					
	(1.440)	(2.870)	(0.407)	(0.633)	(0.347)	(0.426)	(0.312)	(0.295)	(0.233)	(0.308)	(0.205)	(0.342)	(0.349)	(0.508)	(0.960)	(1.037)
Observations	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064	9,064

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Promoting Regional Entrepreneurship Ecosystems: The Role of the University Sector in Australia

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Promoting Regional Entrepreneurship Ecosystems: The Role of the University Sector in Australia

Abstract

This paper examines the role of higher education institutions among the various policies and programmes, community and private sector initiatives within a regional entrepreneurial ecosystem. We use data collected from a set of sixteen interviews with service providers to the entrepreneurship community in Adelaide, SA, to construct a framework of the perceived roles and contributions of the university sector to an entrepreneurial ecosystem. The contribution of this paper relates to its focus on what universities are expected to contribute within a regional and entrepreneurial ecosystem. The findings suggest five specific roles for universities in Australia which opens a discussion around the strategic choices for university executive management in approaching regional engagement in economic development issues through contributions to entrepreneurship. We also discuss the difficulty of the term ecosystem when considered in this context as we encountered it through our analysis.

Introduction

Australia faces the prospect of a sustained high-cost economy. Smaller and relatively isolated regions, once supported by the value chains of scale-based manufacturing firms, are vulnerable and face a challenging future unless the region transitions to a sustainable industrial base. Detroit in the USA is an example of an economy that has not managed this transition well. Adelaide, in South Australia is facing similar circumstances, as General Motors Holden has announced closure of its production plant in the northern suburbs of Adelaide in 2017, nine years after Mitsubishi closed its local production operations in southern metropolitan Adelaide.

In response, the South Australian state government and Adelaide's local community and local government are turning their attentions to entrepreneurship as a means to stimulate regional development through new economic activity. This response is consistent with the argument that a shift in the economic base toward knowledge requires a context and policy environment supportive of entrepreneurship (Audretsch & Thurik, 2004). In 2013 an Entrepreneurial Adelaide movement started under a working project title of 'Towards a City of Entrepreneurs – The Emergence of Adelaide as a Recognised Startup Community' (2013). Consequently, an invitation was sent to selected individuals to attend a public meeting and workshop with an objective to stimulate the entrepreneurial economy. Representatives from universities were included as key actors leading various formal, informal and non-formal education programs directed toward aspiring entrepreneurs. Both the local and state governments got behind this largely private sector driven activity and a draft map of Adelaide's entrepreneurial support programs was developed to describe the entrepreneurial ecosystem. A number of working parties were established which culminated in a larger second meeting later in 2013 to review progress and set new directions. Thereafter, the Entrepreneurial Ecosystem map was expanded and consolidated.

This research engaged with key actors in this movement and posed the question: what is the role of higher education institutions in an entrepreneurial ecosystem among the various policies and programmes, community and private sector initiatives? Universities are special cases whereby they serve a dual role in regional development, developing human capital on the one hand and knowledge and technological resources on the other (Lindqvist, Ketels, Sölvell, 2013). If this is the case, how does it differ when considered through the lens of an entrepreneurial ecosystem?

This paper is structured by first outlining the relationship between universities and economic development and in particular regional economic development. It includes a discussion on the

contribution of entrepreneurship education as a specific measure that universities may adopt to influence economic development. The subsequent section then addresses the regional ecosystem perspective. The conclusion proposes the research implications and suggests a way forward to conducting research that captures the dynamics and complexities of university offerings in entrepreneurship for regional development.

Universities and Regional Economic Development Theories

Recent studies have illustrated the need and benefits of regional level stakeholder relationships through such models as the university engagement model (UEM) and the Triple Helix Model (THM) (Gunasekara, 2006). Because these models are relatively new and informed by limited cases, there is still much to learn about how universities engage in regional governance. This is particularly the case in Australia where the history and cultural roots of the university system are characterised by dependence on government funding, weak private sector funding and, at least until relatively recently, a two tier higher education system (Gunasekara, 2006). Regional governance and leadership participation has not generally been a feature of university strategic management in Australia (Garlick, 2000) and consequently the Australian context does not mirror the international cases upon which the models of university engagement are based.

From an education perspective, the influence of universities on regional economic development can be associated to issues of human capital development through higher levels of general education attainment (Millán, Congregado, Román, van Praag, van Stel, 2013). Due to the very natures of education and entrepreneurship, it is difficult to make explicit connections between these and any form of business success. The case remains that many factors influence entrepreneurial success and isolating the extent to which education specifically contributes to the success of a particular entrepreneur is contentious. However, this perspective does not address the specific case of entrepreneurship education nor entrepreneurship education's specific contribution to the stimulus for entrepreneurship in a region which will be discussed later.

A second view of the role of universities in regional economic development is gained from the perspective of universities as public research providers. From this perspective knowledge spillover is indicated as the primary source of economic contribution and universities are assumed to be the *engines of economic growth* (Smith & Bagchi-Sen, 2012). This view suggests that the research knowledge generated by universities promotes entrepreneurship and universities act as a pivotal node in a regional network of innovation activity. This occurs through such mechanisms as science and research parks, knowledge exchange with external organisations, outreach activities and research partnerships and forming new spin-out firms. However, the OECD report (OECD, 2011) on skills for innovation and research suggests that more attention is needed on the 'soft skills' such as entrepreneurship for those in academic research careers in order to improve the relationships between the university and industry sectors. Next we consider more specifically the issues of entrepreneurship education's contribution to economic development.

Laukkanen (2000) views universities as a 'regional evolution model' generating business and defines this stating "... by conceptualizing the university as a regional evolution mechanism, a different yet parallel educational strategy may be suggested, called a business generating model" (p.25). Laukkanen suggests "... that a university can be conceptualized as a societal (regional) innovation system, and that entrepreneurial education, when embedded in such a system, could be regarded, not only as a task of producing entrepreneurially oriented competent individuals, but also as reproducing the social mechanisms that underpin and facilitate the birth and growth of businesses and firms" (p. 26).

Johnston & Hamilton & Zhang (2008) state that Higher Educational Institutions (HEI) have an important role to play in regional areas that involves the support of small and medium sized (SME) enterprises. Gordon & Hamilton & Jack (2012) elaborate on the entrepreneurship educational training perspective by observing through the course of their research involving SME owner/managers and the identified ways in which this cohort responded to education that "... the evolution of strong networks ... endured beyond the programme and the learning that took place in these networks" (p. 768) was gained through 'reflection' (Cope 2003; Gordon & Jack, 2010; Kempster and Cope, 2010) by the participants and building mutual trust.

Leydesdorff & Deakin (2011) provide a co-evolution view that universities, government and individuals can present an alternative to 'entrepreneurship-based and market dependent representation of knowledge-intensive firms' (p. 59) and state that this has been evidenced in Montreal and Edinburgh. The authors also "... suggest that these interactions generate dynamic spaces within cities where knowledge can be exploited to bootstrap the technology of regional innovation systems. These dynamic spaces can best be understood as spaces of ubiquitous information and communication technologies (ICT) where knowledge is key to regional innovation systems, creating the notion of "smart cities." (p.53). Benneworth (2004) notes that 'densification' (Fontes & Coombes, 2001, p. 84) as a role for universities can increase the development of techno-economic networks and activities in regional areas through entrepreneurship and industry engagement and examines the underdeveloped North-Eastern region of England which is the most economically affected area in the country in need of revitalization and solution based development assistance. Jarvi (2012) further strengthens the case for regional engagement by universities through entrepreneurship education explaining that '... [t]he analysis indicates that entrepreneurship education should be assessed and applied from the perspective of field and region' (p. 365). While this background reveals an awareness of the relative importance of entrepreneurship education, we find that we know relatively little about how this teaching should be embedded in regional ecosystems in order to best influence actual short-term or potential long-term economic objectives.

The emerging concept of entrepreneurial ecosystems

The notion of an entrepreneurial ecosystem is not particularly new although other terms have been used to describe it. For instance Garlick (2000) in an Australian report at the turn of the century described a regional milieu as representing "an area big enough to embrace a wide range of the essential ingredients required to generate competitive economic development, including being a national launch pad for distinctiveness in the global economy for its enterprises and institutions", (p.3). Stathopoulou, Psaltopoulos and Skuras (2004) have also sought to develop a framework for entrepreneurship research in rural European milieus. However, the concept of the milieu for entrepreneurship has in some quarters developed and is more recently being described as an entrepreneurial ecosystem (Hwang & Horowitz, 2012).

The description of the relationship between the entrepreneur and firms with the broader environment, or ecosystem, has also varied among theorists. Substantivists view opportunity as a symbolic interaction between entrepreneurs and their environment (Dimov, 2011) while others suggest that an ecosystem reflects the interactions and interdependencies mapped as industry value chains (Adner & Kapoor, 2010). By introducing a systems perspective into the study of entrepreneurship, it acknowledges that it does not start and stop with the actions of an entrepreneur or their firm but instead it includes the ecosystems that thrive when multiple sectors and actors work together to create a supportive environment for entrepreneurship (Nadgrodkiewicz, 2013).

Governments can have both a positive or negative affect on the institutional settings that support the development of entrepreneurship in regional milieus or ecosystems. Isenberg (2010) has described the elements within an entrepreneurial ecosystem classifying them into six main categories: a conducive culture; enabling policies and leadership; availability of appropriate finance; quality human capital; venture friendly markets for products and services; and a range of institutional and infrastructure support. The institutional elements of the ecosystem are integral mediators of entrepreneurial success (Alvarez, Urbano, Coduras & Ruiz-Navarro, 2011) that changes from place to place and from time to time. The implication of this perception of entrepreneurship is that to obtain the best economic development outcomes from an entrepreneurial ecosystem there is a need for some form of management of the system. However, as Holling (2001) outlines, human systems differ to (eco)systems of nature due to foresight/intentionality, communication and technology. If human systems are considered to behave as ecosystems, they will also resist proactive management and therefore the best one could hope for is reactive governance of the ecosystem to maintain the health of the ecosystem in response to the changes imposed by the actions of particular actors within the ecosystem.

Adopting an ecosystems approach to the study of entrepreneurship, raises questions about how university engagement with other regional stakeholders contributes to governance of the ecosystem to achieve economic effects. Universities as discussed above have a dual role in regional development to both develop human capital and provide a knowledge and technological resource to the region. Furthermore, in Australia particularly, the engagement of universities in matters of regional development has been historically low and business and university relationships are not generally strong. A better understanding of the expected roles of universities in serving entrepreneurial ecosystems is critical for both governments and universities if robust models of policies and practices are to be built, particularly in Australia's case of a transitioning economy with its current high-cost environment and generally poor regional relationships.

Entrepreneurship is an accepted dynamic of any economy and increasingly a vital element to consider when planning for regional development. Universities have emerged as one of the essential levers of entrepreneurial development in an ecosystem. However, entrepreneurship education is currently less defined as a field with respect to its contribution to economic development (O'Connor, 2013). As the appreciation of the relative importance of entrepreneurship deepens it becomes increasingly urgent to question what universities can contribute to the entrepreneurial ecosystem to determine what their specific impact might be.

Methodology

This research deploys an exploratory and interpretive approach to examine perceptions of the entrepreneurial ecosystem programs and service providers about the role of universities. From this perspective the research operates from Schein's (1985) point of view that suggests that research should identify what participants themselves perceive to be important. We adopt a narrative methodology to explore the views of the entrepreneurial ecosystem program and service provider expectations about the role of universities in serving the entrepreneurial ecosystem. Narrative research methods are acknowledged as valuable to the interpretive study of entrepreneurship (Hjorth and Steyaert, 2004; Polkinghorne, 1988).

The adopted narrative method comprised collecting data through interviews with key program and service providers identified from the Entrepreneurial Adelaide project ecosystem map. Due to time and resource limitations a purposive sampling strategy was adopted to identify and invite two participants from each of the eight categories of ecosystem service providers, with

one being a long-standing program actor and the other a relatively new actor, to canvass a broad spectrum of views. Notably, some respondents' organisations contribute to multiple program categories and some respondents, that may represent newer or older programs, may either be new to or quite experienced with the ecosystem and these nuances were also considered when choosing participants. Considerations were also given to geographic representation and a cross-section of types of entrepreneurial ventures that the providers seek to support. The data collection consequently included 16 targeted interviews to inform this paper. The analysis involves the researcher in looking for patterns in the data (Schwandt, 1998; Taylor and Bogdan, 1984) as well as providing rich contextual evidence and meanings to processes that have not been previously explored in depth (Howorth, Tempest & Coupland, 2005). Each of the invited respondents participated in a semi-structured interview which ranged in duration from 60 to 90 minutes.

The analysis for this paper extended only to coding the notes recorded independently by the two interviewers in consultation with the audio recordings of the interview. The codes were then analysed for key conceptual themes and related to observations from the literature to isolate commonalities and differences through comparative analysis. The next stage of analysis will progress to interrogate the data further to identify the hierarchical relationships that are suggested by the data to emerge key propositions for further investigation.

Overview of the Entrepreneurial Adelaide Project

Entrepreneurial Adelaide is a movement within the city of Adelaide, South Australia, Australia which runs under a working title of 'Towards a City of Entrepreneurs – The Emergence of Adelaide as a Recognised Startup Community' (Daly, 2013). It owes its genesis to a catalytic question posed within a discussion between two people at one of the many entrepreneurial events and activities being run around Adelaide in December, 2012. That question asked: '[with] so much happening to support entrepreneurship in Adelaide how ... do you keep track of it?'

The question inspired one of the discussants to adopt a self-directed research project to pursue an answer and an understanding of what he and others had also wondered. Subsequently, a meeting was held on the 4th of January 2013 with seven out of the ten invitees from the entrepreneurial community in Adelaide attending the meeting. Preliminary research into the programs that supported entrepreneurial activity in Adelaide was tabled at this meeting that represented four categories of entrepreneurship support in Adelaide. The meeting participants developed this further adding programs and using coloured 'sticky notes' with yellow to denote 'Education Programs', pink for 'Networking Programs and Events', blue for 'Incubators, Accelerators, and Co-Working Spaces', and green was used to identify 'Government Support Programs and Investors'. This mapping exercise was the first iteration of what has now become known as the map of the Adelaide Entrepreneurial Ecosystem (AEE).

The lack of a device to interpret the landscape of an ecosystem, in this case within the context of the city of Adelaide and its environs in the state of South Australia, was perhaps indicative of the very nature of an ecosystem. This is due, in part, to the fact that the constituent contributors of an ecosystem (Hwang & Horowitz, 2012), being participants, elements or subsections, are not always equipped with the ability to view the ecosystem holistically or in its entirety. Further meetings have been held with working groups being established on five topic areas, namely; Ecosystem Governance, Marketing and Communications, Early-stage Funding, Education, and Social Media and the Internet. Two public forums were also convened on the 25th June 2013 and the 3rd of September 2013. All those within the structure of what has become known as the AEE, have continued to contribute to the map and the latest iteration of

the ‘Adelaide Entrepreneurial Ecosystem Map’ (Waterhouse, 2013, p. 57) now contains eight categories and the colour themes have been extended. The map is regularly updated according to new entrants and recent exits with Draft 5.0 September 2014, being the latest at the time of writing.

It is from this map that the respondents for this research have been drawn as described earlier. Table 1 summarises the category respondents that have contributed to the data collection.

Table 1: Matrix of Participant Respondents to date (Source: Authors)

	Networking and Start-up Events	Formal Education	Industry Education	Co-working Spaces	Incubators & Accelerators	Advisory Services	Government Assistance	Investors
Newer Entrant	✓	✓	✓	✓	✓	✓	✓	✓
Long-standing participant	✓	✓	✓	✓	✓	✓	✓	✓

Analysis and Findings

The interview guide used for this research canvassed a range of issues dealing with the market place, industry and competitive environment for the ecosystem program and service providers. It included questions on the customers and entrepreneurial behaviour of the program and service providers and probed the working of the ecosystem and the existence of gaps and opportunities along with querying the benefit of developing the Adelaide Ecosystem Map and a specific question on the role of the university. The analysis involved listening through the recorded interviews and scanning the written notes to identify any reference to university roles, opportunities for universities to contribute to the ecosystem, observed gaps or inadequacies mentioned with respect to university contributions to the ecosystem or any references to what universities do or how they are engaged in the ecosystem. These references were then brought together and themed into five role descriptions being: Regional Governance; Human Capital Development; Intellectual Resource; Network Facilitator; and, Entrepreneurial Node (refer Table 2).

Perhaps the most unsurprising roles that emerged from this analysis are the two roles of ‘Human Capital Development’ and ‘Intellectual Resource’. Both of these areas are readily and easily identified in the academic literature. However, with respect to Human Capital Development and an entrepreneurial ecosystem the analysis surfaces an explicit expectation that the graduates will be entrepreneurially prepared and not just academically or discipline prepared. Furthermore the analysis suggested that entrepreneurially prepared goes beyond just referring to the entrepreneur role and surfaced both entrepreneurial team roles and leadership more generally.

The ‘Intellectual Resource’ role of the university also occurs as it would be expected although, notably, the expectations of this role surface the tension between ‘near to market’ research and fundamental research that leads to new discoveries that may underpin new market/industry opportunities. However, the expectations associated with this division were not exposed further through the interviews.

The next two roles, Regional Governance and Network Facilitator, that emerge are also to some extent not surprising. However, the literature suggests that, in the context of the Australian market, perhaps these two roles are less articulated and developed. The expectations of and contributions from universities under the Regional Governance role include a long term commitment, strategy development, providing leadership, being an operational informant and being self-regulated to maximise community resource efficiencies. The long term commitment has emerged from the ideas that developing an entrepreneurial ecosystem will take time and the history of longevity in the university system raises expectations that universities are well positioned to 'stay the course' and provide a steady hand as government political persuasion shifts more regularly and industry has a primary concern with commercial viability.

The strategy development expectation reflects the views that universities should have a 'seat at the table' when the development of regional entrepreneurial ecosystems are being determined. The role emerges from the data suggesting that universities have a legitimate contribution to make and specific expertise on entrepreneurship to offer. The expectation of providing leadership is observed from the data that suggests universities need to model the behaviours necessary for entrepreneurship and endorse and support entrepreneurial activities. In this way universities show leadership by taking the active initiating role and promoting the accumulated benefits that may accompany entrepreneurship. The data also suggests the idea that universities should be active in monitoring and sharing information about the regional entrepreneurial ecosystem which gives rise to the expectation of Operational Informant. Critical also was the idea that universities should be Self-regulating Stewards of the knowledge assets and resources residing in the community with the universities actively coordinating efficiencies in a non-competitive way to maximise the advantage and minimise the costs to the community.

The fourth category of university role is Network Facilitator. The data underpinning this area pointed to the fact that universities have the opportunity to make connections. Some of these connections are directly through students and academic staff and relate to connecting industry and international expertise. The university alumni also were raised as a point of indirect connection in that universities can keep expatriate alumni informed and connected back to their region. Locally, alumni also can be connected to the entrepreneurial community through participation in university entrepreneurial events. Another point of connection highlighted the value of the physical assets and spaces the universities have that can serve as attractors and public meeting places to increase the chances of knowledge spill-over. Lastly, universities by their nature connect with a broad array of public and private organisations and institutions and are in a position to act as advocates for entrepreneurship.

Table 2: Key University Roles and Contributions (Source: Authors)

Role	Contribution/Expectation	Examples of types of activities
Regional Governance	Long term commitment	Coordinating ecosystem data and information collection and distribution regionally on an ongoing basis
	Strategy Development	Expert informant and advisor on regional development issues based on international intelligence
	Providing Leadership	Partnering in innovation and risk bearing; leading new projects and experiments of regional significance; acting as lead customer; lending brand credibility; facilitating and supporting student entrepreneurship
	Operational Informant	Advisor on ecosystem performance issues and advances in international trends
	Self-regulating Steward	Through self-regulation, maintain focus on best use of public knowledge resources and maximise internal and external efficiencies among community assets
Human Capital Development	Industry	Provide employment opportunities and career pathways
	Education Touch-point	Provide education opportunities post-secondary school for lifelong learning
	Prepare ‘excellent’ graduates technically competent in chosen discipline	Deliver high quality education
	Prepare graduates for entrepreneurial activity	Develop entrepreneurial career opportunities; develop entrepreneurial team skills among graduates; develop entrepreneurial attitudes, behaviours and ‘spirit’ among graduates; develop graduate leadership capabilities
Intellectual Resource	Industry problem solver	Provide responsive technical research skills and capabilities to industry
	New ‘knowledge’ commercialisation opportunities	Invest in research and new knowledge creation and provide commercialisation opportunities to/with regional actors

Network Facilitator	Connect with Alumni	Maintain relationships with alumni to anchor with the region and contribute to regional growth and development
	Global connections in fields of expertise	Make global connections with expertise and facilitate knowledge exchange with region
	Connected academic staff	Expect academic staff engagement with regional industry and business
	Connected students	Provide opportunities for students to work with industry through internships, research projects and short-term industry/business placements
	Provide open access to physical meeting spaces	Provide plazas, venues and other physical places for industry and community to interact with the university and each other
	Community Connected Advocate	Diverse interactions and activities among various community segments, industry groups, organisations, other institutions and individuals advocating entrepreneurship
Entrepreneurial Node	Outreach	Provide outreach programs and support to facilitate the dissemination and development of entrepreneurial knowledge and expertise to the ecosystem
	In-reach	Provide in-reach programs and support to facilitate the dissemination and development of entrepreneurial knowledge and expertise within the university

The final role is one of being an Entrepreneurial Node. In this role the university acts as the 'go to place' either in the physical or virtual sense for all things entrepreneurial. This role is likely to manifest as an enterprise or entrepreneurship centre, institute or hub. As a node in the entrepreneurial ecosystem, entrepreneurial and innovative ventures will be attracted to the node from either inside or outside of the university. The activities of the node motivate, re-energise or sustain momentum for entrepreneurial ventures. The node also acts as a resource centre that serves and supports entrepreneurial activities again either internal or external to the university.

The emergence of these roles adds depth and breadth to the more common ideas of the university role as an education and research institution. Although there is little by way of radical new knowledge here the composite idea of the various roles paints a more detailed picture of how universities can serve an entrepreneurial ecosystem.

Discussion

In Australia at least, entrepreneurship is only just emerging as a legitimate part of Australian policy as evidenced by the Australian Government's recent announcement of the formation of the 'Entrepreneurs Infrastructure Program' (Commonwealth of Australia, 2014). Up until this time, innovation and commercialisation have been the focus of previous governments, often neglecting the extent of the challenge that faces new and established firms to build local commercially thriving businesses from the world of innovation, research and new knowledge. In Adelaide, South Australia particularly, the urgency for economic renewal and transition is focusing the attention of policy-makers and others on the role that entrepreneurship can play in re-shaping an economy and introducing innovation and hence the entrepreneurial ecosystem has been highlighted as an area for policy attention.

This paper sets out to examine what universities are expected to contribute in raising the prospects of innovation from entrepreneurship contained within a regional milieu. From this standpoint we adopted the idea of an entrepreneurial ecosystem as was being promulgated in the Adelaide region. During our analysis we encountered a problem with the analogy of an ecosystem in that an ecosystem is self-preserved and self-directed and has no artificial interference. We instead recognised that, in accordance with Holling (2001), human systems differ to (eco)systems of nature due to foresight/intentionality, communication and technology. The very idea of meeting to discuss and examine the design of Adelaide's ecosystem with intent to intervene in the system's development runs counter to the concept of an ecosystem.

In our analysis and discussion of these ideas with key stakeholders, a further complication was recognised as it was also pointed out that the rainforest analogy (Hwang & Horowitz, 2012) that was frequently drawn upon in discussions of Adelaide's entrepreneurial ecosystem did carry some weight if it were acknowledged that rainforests vary according to the climate conditions. This interpretation meant that tropical rainforests differ to temperate rainforests. In following the thread of this idea it also suggests then that the drawing in or adoption of elements from rainforests that do not share the same conditions, climate and population of species is a flawed idea. Extending the analogy suggests at the extreme that the policies, practices and inherent activities of one ecosystem should not be expected to be easily or readily supplanted into another ecosystem and expected to survive with the same vigour.

The analogy we drew was that the 'ecosystem' was more like a botanic garden whereby certain areas and plots are cultivated and specifically designed to deliberately resemble or approximate the ecosystems of other places to sustain the life of plants that may be foreign to the local environment. However, the local conditions provide limitations to the extent that foreign ideas can take root and flourish in a non-sustaining environment and therefore the careful selection of ideas that can be sustained without excessive costs and artificial infrastructure is important.

The evidence from the data also supports the idea that the term 'ecosystem', and its associated analogy, has limited applicability. It was clearly viewed that universities had a service obligation and a leadership role to play that we placed under the heading of regional governance adopting the terminology of the literature. Natural ecosystems do not have a regional governance mechanism. At the same time there is an element of 'borrowing' and 'planting' the ideas of entrepreneurship from other places, in Adelaide's case, and in particular, from the USA with Silicon Valley being the iconic example. This approach to the local ecosystem renders it less like an ecosystem and closer to a botanic garden. Hence, we prefer to return to the use of the term milieu as it avoids the problems of other descriptions such as ecosystem and environment that suggest cross-overs into natural system descriptions that do not faithfully hold with that which is experienced. The implication for policy-makers and universities is that

their roles within the frame of regional governance is to help carefully select and cultivate the entrepreneurship seeds and plants that can adapt to the local conditions.

The contribution of this paper relates to its focus on what universities are expected to contribute within a regional and entrepreneurial milieu. The findings suggest five specific roles. As one may expect education of highly skilled graduates is a key contribution and expectation, although, clearly, the expectation extended to graduates who are prepared and capable of operating in an entrepreneurial way, within an entrepreneurial team and providing entrepreneurial leadership. This supports the idea of a broad entrepreneurial education across the disciplines in university.

The Intellectual Resource contribution is also an unremarkable finding and is quite consistent with the literature. However, the tension between the 'near to market' research and 'fundamental' research is unresolved by the data. There is no question that universities have a role to play in providing both research functions and while expectations may go to both strands of activity the investment, training and development, strategic positioning and reputational influences of both positions can cause internal conflicts and tensions within the university system. As the higher education system in Australia undergoes further de-regulation and opening to free market principles, individual universities may need to make clear strategic choices.

The Network Facilitation expectation and contribution adds a refinement to the community engagement concept that universities generally define as part of their role. An explicit statement of network facilitation highlights the important function of infrastructural facilities, information technology usage (apart from educational platforms), service provision and contract management issues that are critical to businesses that are designed to operate on a network facilitation business model (Stabell & Fjeldstad 1999). This too increases the complexity of the issues facing the university executive management team and will force specific trade-offs and difficult strategic choices.

The role of Entrepreneurial Node is on one hand obvious but on the other obscure. The obvious is apparent when universities host a specific entrepreneurship or enterprise centre or institute. It should be noted though that these centres are not homogenous in their activities and while some may play a role as incubator, accelerator and facilitator of new venture initiatives, others may be research oriented and knowledge based nodes (Mazzarol 2014). The obscurity of the role can be observed in the absence of an enterprise or entrepreneurship centre within the university. In this instance the role of the university as an entrepreneurial node may not be immediately evident or definable as a specific place and activity. Instead the entrepreneurial node function and role may take place as discipline specific activities of industry engagement or commercialisation found in various locations distributed across the university.

The fifth expected contribution is Regional Governance. This arguably has the most applicability to the issues of innovation within a regional milieu. Within this role there are some points that universities are likely to have already adopted and others that may be foreign concepts, particularly in Australia. The idea of contributing to Regional Governance also surfaces issues that involve the extent to which the other expectations and contributions are embraced. Quite aside from the strategic and competitive choices that need to be made for the survival of the university, the regional governance choices endow the university with added responsibilities that may conflict with or, at the very least, be incompatible with the resources and any given strategic direction. In a region such as Adelaide, there are three major universities. This at least may relieve the burden of regional governance from any one institution, although it may leave the region also devoid of university engagement with regional

governance as each leaves it to the other to play any specific role. Bringing the university into account in these issues should be the task of policy-makers although it is unlikely that any one mechanism for doing so would be effective in all cases as the milieu histories, cultures, regulatory frames, economic strengths, capabilities and competencies to name a few factors will all vary between different regions and nations.

Limitations and Future Research Opportunities

The presentation of this research is currently based on the first cut analysis and represents a work in progress which draws attention to an obvious limitation. Given that the data collection of this research is small and drawn from a single region a much broader sample would be beneficial. However, as the work is intended to be a theory building exercise it is fit for purpose and is designed in a way that will lead to further research opportunities to explore and examine the findings in different regions and contexts and with different methodologies.

The five roles elaborated by this research though also raises the question as to what extent should all universities contribute to every aspect of these roles and under what circumstances should the roles vary in scope. In a region such as Adelaide, there are three major universities and a number of smaller international and niche universities operating. Is it feasible for each university to adopt all roles and how is it that specific roles can be elevated to be of more strategic importance than others? By contrast, what happens in regions where there is only one university? How does a region manage the demands upon its university while still allowing the university autonomy and freedom of strategic choice?

From the perspective of the regional milieu, it is easily recognisable that milieus can vary enormously due to a myriad of factors related to history, culture, regulations, regional resources, access to capital etc. The questions this research raises therefore is, if the roles for universities are accepted, what are the specific practices that have greatest effect and under what conditions can these practices be readily adopted in different types or forms of milieu?

These types of questions establish a set of difficult conditions that research will need to make some allowances if a set of experimental conditions are to shed light on these issues. A solution we propose is to establish an international regional governance network of government and university partnerships that are able to cooperate in research with strategic coordinated interventions and the gathering of data that can be shared and accessed across the network. While this method of data collection and comparison will not allow complete isolation of variables equivalent to experimental conditions, it will facilitate research through relationships that can be coordinated in such a way that some factors can be controlled on specific interventions. A feature of this network would be the learning opportunities that ultimately arise through the network which in effect will allow universities to be informed curators of regional knowledge, networks and education that can be crafted to most effectively meet the innovation and entrepreneurship needs of their region.

Conclusion

Although this research is a work in progress, the findings suggest the development of a refined set of ideas about how universities can engage in assisting with innovation in regional milieus. In our analysis we reject the analogy of an ecosystem due to the fact that human systems are imbued with characteristics that do not faithfully reflect natural ecosystems. Instead we suggest that interventions in regional milieus are more similar to developing a botanic garden whereby entrepreneurship is one segment area within the milieu that serves a specific function of regional development and industrial transition. Governments without question are drawn to attending to this section of the garden and we propose that universities too have at least five

potential roles to play as defined by this research. These roles also imply service obligations that suggest to some extent that universities are knowledge curators with respect to engaging in matters of regional governance. In response to the difficulties in accounting for milieu variation and the research and policy-making that can most effectively develop an entrepreneurial milieu we call for the establishment of a regional governance network of partnered universities and regionally based governments. In proposing this idea, the authors invite discussion and feedback.

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A Step into the Unknown: Universities and the Governance of Regional Economic Development

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A Step Into The Unknown: Universities And The Governance Of Regional Economic Development

Abstract

As the social and economic landscape changes, universities are coming under growing pressure to contribute to the economic development of their localities. This paper explores the increasing trends towards universities as governance, and perhaps even governmental, actors in the sphere of economic development through activities to support economic and entrepreneurship development in their regions and localities. Despite the considerable academic and policy interest in universities' economic activities, there is relatively little exploration of more governance-centred activities. As such, a case study is presented of an institution in the UK, Lancaster University, which has a history of engaging in engagement activities and is increasingly situating itself in the economic governance sphere. Drawing on the experiences of those working at the "coalface" of economic governance activities and the opinions of stakeholders participating in the programme, the opportunities and potential challenges faced by a university when engaging in economic governance activities are explored. As such, best practice is identified, as are the potential pitfalls to be avoided, as learned through the trial and error of delivering a regional economic development programme. The ultimate goal of this paper is to maximise the positive impact of universities activities in the realm of regional economic governance, and to shed light on an area of universities' activities currently under-explored.

Introduction

Universities, and the knowledge they hold, have increasingly come to be seen as key stimulants of regional economic development (Boschma, 2004; Etzkowitz & Leydesdorff, 1997; Kitson, Howells, Braham, & Westlake, 2009; Rutten & Boekema, 2007; Smith, 2007). As such, state agencies of regional economic development are concerned with maximising the economic impact of universities through strategies and actions to leverage the emergence of the knowledge-based economy (Drucker & Goldstein, 2007). Particular interest is paid to the potential for commercialisation and economic application of universities' knowledge resource through what are often referred to as "third mission" activities such as technology transfer, university-industry partnerships, and educational curricula tailored to match the demand of local industry. Furthermore, universities are increasingly expected to take an active role in the development of their regions (Chatterton & Goddard, 2000; Goddard, Coombes, Kempton, & Vallance, 2014). As Uyarra explains:

The impact of universities on the economic wellbeing and innovative potential of regions has been the object of intense scholarly and policy interest in the last years. (Uyarra, 2010, p.1227)

Much study of the role of universities in regional economic development has taken place (Godin & Gingras, 2000; Nelles & Vorley, 2010; Olssen & Peters, 2005), including practical examples and case-studies of university engagement activities (Bercovitz, Feldman, Feller, & Burton, 2001; Bramwell & Wolfe, 2008; Cash, Bhadury, McCrickard, & Weeks, 2010; Cox & Taylor, 2006; Garlick & Langworthy, 2008; Gordon, Hamilton, & Jack, 2012), and theorisation of the changing role of universities (Etzkowitz & Leydesdorff, 1997; Gibbons et al., 1984). A popular concept has been that of the "entrepreneurial university" as a driver of entrepreneurial activity for economic growth (Clark, 2001; Klofsten and Jones-Evans, 2000; Audretsch, 2012). However, less attention has been devoted to another dimension of universities' engagement activities, namely as actors in the sphere of economic governance and as regional animators. There is increasing interest in the concept of the "engaged university" (Chatterton & Goddard,

2000) and the growing role and importance of universities as actors in the governance of economic development. This is the research agenda addressed here, due to the lack of evidence relating to the benefits, mechanisms and impacts associated with the different types of engagement in different universities (May & Perry, 2006; Uyarra, 2010).

As both universities' and governments' budgets are squeezed through austerity and increasing competition for resources in the globalised economy, it becomes mutually beneficial for universities to increasingly engage in a wider range of governance activities. Universities fall under growing pressures to prove their worth and contribution. Activities falling under the banner of the governance of economic development (henceforth referred to simply as "economic governance" activities) include: designing and running programmes to support entrepreneurship, innovation, and business growth; engaging with policymakers at the local, regional, and/or national levels; acting as regional animators, engaging with businesses and communities in their localities for economic and wider social benefit. Due to the fact that much of the literature on universities' economic activities focuses on traditional, science and technology based "third mission" style activities, such as spin-out, licensing, and business collaboration, there is a need to explore broader economic governance activities in more depth.

In this paper, a case study is presented of an institution in the UK that has a track record of engaging in governance activities through designing and delivering innovation, entrepreneurship and business support programmes, and engaging with policymakers at multiple levels; namely Lancaster University. There is a need to better understand the processes of engaging in governance activities, how they can be improved and to minimise any barriers or issues that could be faced. By distilling the lessons from Lancaster's rich experience this paper provides an opportunity to disseminate best practice, and to avoid the replication of less-than-best practice.

The paper is structured as follows. First, an overview of the evolution of universities' roles from that of purely teaching and research to the "entrepreneurial" and then the "engaged" university is presented. Following the overview of the literature is the presentation of the Lancaster case study, an understanding of which is necessary to situate the discussion. The historical evolution of the university and its various missions will be discussed, followed by an overview of contemporary involvement in regional economic governance activities, the experience of which this paper is centred around. Following the case study context section is the methodology, which explains how qualitative methods are used to illicit insights about the experience of engaging in governance activities. The discussion section is structured around key themes identified as areas where the university can add value and behave as an engaged university. A series of recommendations are provided to maximise the positive impact of universities' engagement in regional economic governance activities so that the lessons of the Lancaster case study can be learned and disseminated.

Evolution of Universities Roles from the "Third Mission" to the "Engaged University"

In this section, a brief overview is provided of the historical trajectory of the evolution of universities' roles, which leads us to the current state whereby we are witnessing an increasing trend towards the "engaged" university, which partakes in governance activities and acts as a regional animator. Whilst the engaged university is an emerging research area, especially in the domain of regional economic development, it is still reasonably under studied and theorised. There is still not a comprehensive understanding of what the engaged university is and how it functions, and how activities in the governance domain compliment or compete with the other missions of the university. The bulk of research has focussed on more traditional third mission activities such as licensing, spin-out, and activities of the "entrepreneurial" university (Audretsch, 2014; Clark, 2001; Svensson, Klofsten, & Etzkowitz, 2012; Urbano &

Guerrero, 2013). There is much less attention paid to universities interactions with government at various levels, and incorporation of governance activities into universities activities, be it as part of the third mission or as a fourth, fifth, or *nth* mission. There is a high degree of interest in both academic and policy spheres concerning the wider engagement roles of universities beyond the third mission, encompassing governance roles.

It is the model of the “engaged university” under exploration here, where universities are seen as “enablers” or “amateurs” of regional development, embedding a stronger regional focus in their missions within broad-based coalitions of state and non-state actors (Uyarra, 2010). Universities can occupy spaces of governance, take a developmental role, link up with policy at various levels, and provide leadership, joined-up policies, and incentives for regional economic development (Chatterton & Goddard, 2000; Gunasekara, 2006). Essentially, the engaged university’s role is that of an institutional actor within regional networks of learning and governance (Boucher, Conway, & Van Der Meer, 2003) and can support the development of regional knowledge infrastructures. Engaged universities act as “nodes”, able to combine external resources and influences with local needs (Bathelt, Malmberg, & Maskell, 2004; Benneworth & Hospers, 2007).

Rose, Decter, Robinson, Jack, & Lockett (2013) explain how a combination of economic and political factors, as well as the individual histories and cultures of institutions, have led to enterprise and the encouragement of entrepreneurship becoming key elements of universities’ activities. The “third mission” has been added to the original two missions of research and teaching, resulting in a widening of universities’ roles and activities they undertake towards a more entrepreneurial orientation. These authors view the emphasis on increasing knowledge transfer in government policy and the increased funding opportunities available as responsible for moving business engagement “higher up the agenda” for many universities.

Universities are increasingly expected to take an active role in the development of their regions (Goddard et al., 2014) because “regionally-engaged higher education institutions can become a key asset and powerhouse for economic development” (Chatterton & Goddard, 2000, p.475). As Uyarra (2010) explains, the roles they are seen to play have changed over the past 25 years as a result of the expansion of higher education, funding constraints, and a move towards a new paradigm (i.e. “Mode 2”) of knowledge production with a greater focus on building ties between universities and “the rest of the economy”. Universities have come to be seen as key institutional actors within their national and regional systems of innovation (Chatterton & Goddard, 2000; Gunasekara, 2006; Mowery & Sampat, 2005).

The contribution of higher education institutions to the social and cultural development of their localities is not new, but increasingly, “being located “in” regions, universities and colleges are asked by a new set of regional actors and agencies to make an active contribution to the development “of” these regions” (Chatterton & Goddard, 2000 p. 475). This move has been most visible in terms of what are grouped together here as “third mission activities”, i.e. those that have direct economic benefit. However, there are also moves towards what (Chatterton & Goddard, 2000 p.476) term community service roles and “value added management” within the “learning region”.

Previous studies of universities’ economic governance activities have been conducted (Gunasekara, 2006; OECD, 2007; Uyarra, 2010) and the findings of these can be distilled: there are relatively few cases of successful engagement in this domain, and those that exist are generally small-scale, short-term initiatives. A number of barriers are identified which are preventing the embedding of such practices into wider regional policies, such as the poor alignment of national policies at a regional level, limits to leadership within universities,

limited capacity of local and regional agents to work with HEIs, and inadequate funding and incentives. Uyarra (2010 p.1240) suggests that “many universities pay lip service to regional engagement, without evidence of a clear commitment and effective coordination between this and other objectives”. A massive challenge is faced by universities to link their teaching, research, third mission, and community service roles, and also to engage with the various elements of regional development; significant challenges of funding, staff development, and structuring the internal mechanisms exist (Chatterton & Goddard, 2000). In short, the move towards increased engagement has not necessarily been a smooth one; tensions arise as the universities’ missions expand and staff are expected to perform more and different roles in an increasingly complex landscape. As Rose et al. (2013) found, tensions arise over what is core academic activity and how peoples’ time should be spent considering the pressure to conduct teaching and research in particular. And, as these authors point out, whilst teaching and research are in the “comfort zone” of academics, engagement often is not.

Case Study of a University: Lancaster University, the “Engaged University”

Lancaster provides an interesting case study of an engaged university because it has a history of engaging in the governance of regional economic development through providing programmes and actions to support the local and regional business population. In recent times, this role has been expanded to engage more directly in governance activities through designing and delivering a large-scale programme funded by and in partnership with central government. This is part of the wider trend outlined above, whereby universities roles have expanded and shifted in favour of more engagement and outreach activities for the economic and social benefit of their regions. Before outlining the present situation and the governance activities currently underway, some background history of Lancaster University and its engagement activities is provided to set the context of the case study. It is important to appreciate the trajectories and history of the university in order to understand the situation today and how it was reached.

Rose et al. (2013) provide a detailed overview of the evolution of the university over the past fifty years, focussing particularly on the evolution of university-business engagement, of which the pertinent points will be elucidated here. For example, these authors note a “strong pattern of engagement in regeneration activities, RDF and ERDF funding, and arising from targets imposed by these funding bodies, contacts with SMEs”. As such, the University has a strong precedent of working with government at various levels and delivering business support programmes in the North West region. The Institute for Entrepreneurship and Enterprise Development (IEED) grew initially from a core of pioneer teaching in entrepreneurship, based in the Management School at Lancaster University. The IEED was established in 2003 and gained full departmental status in 2008. From the outset the vision for the IEED was to become a leader in entrepreneurship research and education in partnership with business and community. This was achieved by undertaking and disseminating interdisciplinary research in entrepreneurship, innovation and entrepreneurial learning to inform curriculum development at undergraduate, postgraduate and post-experience levels. At the same time initiatives were developed which responded to identified and emerging needs within the region, through involvement in a range of partnership activities and specialist programmes targeted at supporting small- and medium-sized businesses (SMEs) growth.

The first example of the IEED acting in a governance role was the roll-out of the LEAD programme. The pilot programme was commissioned by the Northwest Regional Development Agency. Between October 2004 and March 2006 four cohorts of owner managers, totalling 67 participants completed LEAD. Evaluation of that pilot ; Wren and Jones, 2006; IEED, 2013) showed that 90% of participants reported significant increases in profitability, employment or

sales turnover. Crucially, LEAD was seen as an important contributor to these positive changes. Following these findings LEAD was rolled out through a network of providers trained and overseen by Lancaster University (Dada, Jack and George, 2014). Across the North West of England, South West England and throughout Wales there have been over 2,000 LEAD graduates. This was the first example of ‘arms-length’ support for SME growth, funded by government agencies with a view to positively impacting on economic development.

The IEED department has always been engaged in governance activities in the local area, and has long been receiving funding from government and regional development agencies to engage with the local business community. However, this paper argues that it has taken a step (or perhaps a leap) forward in this direction over the course of the past year by taking on the design, management, and delivery of a £32 million programme to develop a national network of business hubs, funded by UK central government through the Regional Growth Fund. This has taken the department further down the path of governance activities, indeed acting almost as a government actor by designing, delivering, and managing a nation-wide economic development programme. The W2GH programme funded by RGF builds on this experience of working in partnership with others to support SMEs with a view to fostering economic growth. The scale and scope of the programme is unprecedented in terms of the governance role of a higher education institution. The activity in terms of fund holding, distribution, monitoring and evaluation is path-breaking. There was no precedent to follow in terms of setting up the programme. The ambition was also to go beyond the mechanics of compliant competent project management, to add value to the emergent growth hubs.

As such, it is something of a “step into the unknown” for the department and the University, and indeed the UK Government because it is the first RGF project delivered by a university. This has thrown up a number of interesting insights about what the experience of undertaking this kind of activity is like for those actually working in the university, experiencing the changing roles and missions. The IEED and RGF experience is considered an interesting case study to illustrate the benefits and challenges of universities and academics engaging this type of activity, and to learn the lessons going forwards.

Methods of Enquiry

Given our interests were to understand more about the “engaged university” and the growing role and importance of universities as actors in the governance of economic development, we purposefully chose (Pratt, 2009) the IEED department within Lancaster University Management School for our case study. A number of qualitative methods are combined in order to build up the case study, because qualitative methods were deemed the most appropriate to gather the information needed to address the research questions posed by this study. Also, the access afforded to key individuals and organisations meant that an in-depth qualitative approach was indeed possible. Qualitative research is widely seen to be an appropriate research approach when answering research questions relating to the “how” and “why”, and also for building theory inductively (Bansal and Corley, 2011, 2012). In particular, case studies are considered appropriate to “help sharpen existing theory by pointing to gaps and beginning to fill them” (Siggelkow, 2007, p. 21). In this paper, significant gaps have been identified in the literature relating to the entrepreneurial university and the triple helix theory in particular, whereby the university-government dimensions are under explored and theorised. As such, a case study approach was considered from the outset as a useful and practical approach to begin to fill these gaps. Meanwhile, we recognise that a single case such as this cannot prove a theory, but it can identify violations (Siggelkow, 2007) and begin to “fill in the blanks”. For a convincing defence of the case study methodology Eisenhart and Graebner (2007) is called forward.

The case study method has increased in popularity in recent years and is now widely regarded as a useful approach for research (Eisenhardt, 1989; Yin, 1994; Gummesson, 2000; Curran and Blackburn, 2001; De Massis and Kotlar, 2014). Work in management, for example, has shown that the case study approach is particularly beneficial when looking for insight and in-depth understanding about a particular phenomenon (Penrose, 1960; Pettigrew, 1973). Case studies seemed appropriate for the fieldwork for a number of reasons. Firstly, as an approach it can explain events and deal with them over a period of time, rather than with the frequency of events (Chetty, 1996: 78). Secondly, as a method, case studies allow a holistic view to be taken so processes or events can be dealt with (Gummesson, 2000). Thirdly, case studies are appropriate when “how” and “why” questions are asked (Yin, 1994: 1) or when the phenomena being studied cannot easily be separated from the context in which it takes place (Yin, 1993: 3). The use of the case study approach appeared to provide a number of advantages for this study. As a method it does not rely solely on ethnography or participant-observation (Yin, 1994: 10). Instead, it would enable rich data to be generated from a variety of sources, in this case, documents, questionnaires, interviews and observation as well as quantitative data sources (questionnaires) (Eisenhardt, 1991: 538; Yin, 1994: 8; Chetty, 1996: 77). Multiple data sources are recognised as being critical for triangulation and substantiating the findings of a study (Eisenhardt, 1991; Denzin and Lincoln, 1994). Multiple data sources also increase the credibility of a study (Patton, 1990).

There are three main reasons why the IEED department has been chosen as an excellent case study subject for investigating the role of universities in the governance of regional economic development. The first is the statement of intent when the department was originally established to be excellent in research and education, but also in dialogue with local business and community. Secondly, the scale and scope of knowledge exchange and engagement activity alongside world leading research and teaching is exceptional in the UK academic context. And finally, the W2GH programme is the first of its kind to be delivered by a university, and this illustrates a unique and highly innovative role that the institution is playing.

As an approach the case study method has met with a number of criticisms (for an overview see: Eisenhardt and Graebner, 2007; Siggelkow, 2007). Case studies have been argued to lack statistical validity and any ability for testing hypothesis because only a limited number of cases are dealt with, creating issues about generalisability to a much larger population (Gummesson, 2000). However, the concern with this study was for understanding rather than testing. Thus the strengths of the case study approach outweighed its weaknesses (Chetty, 1996, p.74). The case study method allows a phenomenon to be studied in context by drawing on multiple sources of evidence and so it promotes in-depth understanding (Eisenhardt, 1989; Stake, 1995; De Massis and Kotlar, 2014). Rather than use multiple case studies, we chose to only focus on a single case for this project (Eisenhardt, 1991; Dyers and Wilkins, 1991). This decision was made because of the interesting nature of our case, our ability to access a number of data sources and the extent to which our case was engaged within the region. Yin (1994, p.41) illustrated that relying on a single case can be problematic due to misrepresentation but given our access we felt it was an appropriate method to use and that it would help to overcome issues like disclosure, scope and permission that tend to be associated with case study research (Buckley and Chapman, 1997). We chose an exploratory case study approach grounded in real life context (De Massis and Kotlar, 2014)

Our main sources for data collection were questionnaires, informal interviews, observations (participatory and non-participatory) and documentary evidence. Data was collected between January and September 2014. Questionnaires were administered following each of the events for the programme network and stakeholders in January, March, July, and September. Between

15 and 20 questionnaires were collected from each event. To see questionnaire pro-formas and more information about numbers please see appendix. These were completely anonymised at the point of administering, and so the extracts presented in this paper have not been labelled or attributed at all because we are unaware of who filled in the questionnaires. Raw data from interviews is not included, because it has not yet been transcribed and analysed, but insights gained from conducting the six informal interviews and partaking in conversations with those involved in the programme have informed this paper. A more informal mode of interviewing and discussion was considered more appropriate than a structured and recorded approach, due to the sensitive nature of the interview content, and also the emphasis on personal reflections and experiences. A more informal and conversational manner was found to be more appropriate for eliciting this kind of information and ensuring discussants remained relaxed and comfortable to share their thoughts and feelings about being involved in the programme. Observations were carried out of programme meetings and events by the researchers, and these insights similarly feed into the discussion in this paper. Documentary evidence is in the form of policy documents, monitoring documents, and reports associated with the programme. Raw data was gathered together, reduced and condensed before being sorted into descriptive categories and potential themes which seemed to fit with our core interests and which we felt would best answer our research questions (De Massis and Kotlar, 2014; Eisenhardt, 1989; McKeever et al, 2014). The next step involved searching the remaining data for patterns and commonalities and basically asking ourselves “what is really going on here?” (Halinen & Tornroos, 2005; Bruton & Ahlstrom, 2003; McKeever et al, 2014). This process involved looking more closely for the links, emerging patterns and connections in the data and reflecting on these, while the research team discussed them at length (De Massis and Kotlar, 2014; Jack, 2005; McKeever et al, 2014). Our data analysis process was guided by Jack et al, 2010 and McKeever et al, 2014 and informed by De Massis & Kotlar, 2014 and Graebner et al, 2012 in that first we searched all data for patterns or themes relating to our interests. Second, we refined these themes into descriptive categories. An identified theme became a category when we were able to define it descriptively in such a way that we could distinguish it clearly. Descriptive categories were then synthesized into analytical categories which helped explain the situations of respondents. Our intentions were to seek out patterns across our data that when brought together helped to explain things (Bansal & Corley, 2012).

Emerging Insights from the W2GH Programme

Through considering the observed experience of undertaking the W2GH programme and by gathering questionnaire feedback from programme participants, a number of themes emerged about the role the university is playing in the governance of the programme. The themes discussed here have been structured around a set of key insights regarding the opportunities identified for universities to contribute positively in the economic governance sphere, whilst also highlighting the challenges inherent in this activity. As well as shedding light on the experiences and process involved in undertaking this kind of regional governance activity, this paper aims to share best practice and “real world” experiences in order that the positive roles and impacts of universities on their local and regional economies can be enhanced. Some practical examples are provided from the programme in order to illustrate the points being made and also to share best practice and explore what has or has not worked well in the W2GH experience.

An important role that Lancaster has taken in the W2GH programme is as a network enabler and facilitator of interactive learning between the programme stakeholders. Due to the large scale of the programme and the geographical dispersal of the various participants across fifteen regions of England, an important stream of activity is to create and strengthen the network and to facilitate interactive learning in order that the different hubs can learn from each other, and

communicate any issues they are facing. In practical terms, there are several ways in which Lancaster University has helped to build and develop the growth hubs network.

The first is by designing a series of events for different partners and stakeholders to come together, discuss the programme, express their views and to learn from each other. It has been important to establish a voice and a shared identity for the network through these events, as well as providing the essential information about the programme. For example, one event involved a Professor from the University who is an expert in stakeholder analysis running a session where the hubs all mapped out their stakeholders and partners, and considered how to best develop and strengthen the relationships between them. This activity was received positively, and for many participants it was the first time they had attempted stakeholder analysis. In another event, the Growth Hubs were asked by a Lancaster University facilitator to present their “journey” from zero to a fully functioning Growth Hub in six months. Some sketched this out, others discussed it, and one group even acted it out. Thus, a reflexive and interactive network is established, where participants are encouraged to actively participate and share experiences whilst learning new skills and information that could be useful in the programme itself. These events have created a community that actively works outside of the scheduled events to learn from one another and share best practice.

Other ways in which the university facilitates the network is through virtual activities, such as a managed LinkedIn group where questions, points of interest, or general discussions can be posted. Also, webinars are regularly held, where network participants can ask questions, and raise any concerns in the operation of the programme with those monitoring and evaluating the programme. As well as connecting the current programme partners, the university is facilitating a wider network of interested organisations and individuals in order that further opportunities, synergies, and best-practice sharing can be explored as widely as possible. The opportunity to network with other hubs and programme partners, to learn from each other, and to share experiences has proved valuable to participants, as the following quote summarises:

‘It was a really good mix of [local and national government, and universities]. It was incredibly useful to meet some of our neighbouring LEPs and see the stage of their development and readiness. I found the presentations from the trail blazers in [X city] and [Y county] particularly useful.’

The University is well placed to act as a neutral intermediary in between these different interests and voices, steering a programme in the right direction and achieving a balance of views. As is often the case in programmes pertaining to regional economic development and entrepreneurship, it has been necessary to bring the different levels of government around the same table to co-ordinate approaches and ensure coherent support is offered. This is an especially pertinent issue in the UK, where the governance of economic development since the abolishment of the Regional Development Agencies has been increasingly centralised, leading to certain tensions and changes in the economic governance landscape. The University, in undertaking the governance of the W2GH programme, stepped into this complex situation. There can be pre-existing dynamics and tensions between different groups that may or may not require management, and there may be some inequalities or imbalances in relationships. By negotiating this landscape carefully, and ensuring that each group had a voice and a platform to express their opinions and perspectives, the university could provide a positive facilitating role and encourage the groups to speak to each other in a more constructive manner.

W2GH participants appreciated the difficulties inherent in achieving this, and saw bringing the different groups together as a valuable, yet inherently problematic task. One acknowledged the

“difficulties in bringing everyone to the table, the threats and opportunities.”, and another highlighted the importance of *“managing partnerships- managing risks associated with programme delivery, funding outcomes... Each partner can work complementary rather than competitively”*. The views are well summarised by this respondents view that *“it’s difficult because you are in between government and individual growth hubs but some way to facilitate discussion about local realities and any issues (which may or may not exist) with central government expectations”*.

Another challenge is to strike the right balance between providing value-added beyond what an organisation delivering economic development programmes would usually and taking participants too far out of their comfort zone. In order to demonstrate the added-value of involving universities in governance activities, and to ensure that the programme is having a positive impact it is necessary to present an alternative way of doing things compared to what a governmental (or similar) organisation would usually do. However, change is not always welcome. Some participants’ reviews can illustrate how difficult striking this balance between stability and change can be. For one participant the more interactive and alternative manner in which the university approaches the network building did not sit well because it was not considered serious enough: *“I’d rather concentrate on issues than play games”*.

But for another participant the opposite was experiences, and activities were too far in the academic sphere: *“It was quite “academic” and failed to have a well-defined outcome.”*

These two quotes illustrate what a delicate balance it can be to design events which are engaging yet are not perceived frivolous or a waste of time. Of course a degree of resistance to the alternative way of doing things is expected, and for participants this was their first experience of working with a university as the main organisation delivering a programme. It is important to remember that stakeholders may not be accustomed to approaches that may seem perfectly natural to universities and academics. However, by and large programme stakeholders were positive about the alternative approaches taken, and the way in which network engagement and sharing was encouraged. Being given the chance to speak and voice their opinions, rather than being “talked at”, was highly valued.

There are two principal ways in which the university is seen to add value to the governance of the W2GH programme, but there are undoubtedly a number of small ways also. The two most obvious are the value-added that the university can bring in terms of marrying policy practice and research, and the ability of the university to manage the programme in a rigorous and responsible manner. By combining insights gained from research, universities are in a position to enhance the quality of governance activities through, for example, designing better programmes which are backed up with empirical evidence, feeding into the policymaking process with research findings, and monitoring and evaluating programmes in order that lessons can be learned and better programmes designed in the future. These are all activities that universities are in a better position to undertake, compared to more traditional governmental organisations because of their pre-existing competencies and capabilities, and the fact that research is such a significant part of their activities. As organisations with large knowledge resources, data-sets, and researchers employed within them, universities have the potential to feed into policymaking and practice for the better, increasing the evidence-base upon which it is drawn and continuing to improve outcomes.

A key challenge for the University when engaging in governance activities, especially if this is a new departure or direction for a university’s work, is to establish its legitimacy as an actor in this sphere, and to ensure the requisite competencies and capabilities exist within the organisation. As an illustrative example, successfully winning, administering, and reporting

multi-million pound research council funding does not automatically mean the institution is well equipped to take on European Commission funding, with its notoriously stringent processes and requirements. The institutional risk can be high, because with some funding streams (such as ESIF) money is recuperated if reporting is insufficient or the programme does not meet its targets (for example, jobs created). Universities may not be accustomed in having to report and monitor in this way, and to have to deliver such literal and stringent outcomes.

In the case of Lancaster, the legitimacy of the institutions broadly has been built up through consistent engagement in governance activities and receipt of government funds (including Structural Funds) to run economic development and entrepreneurship programmes. As such, the University has developed the capacity and capabilities to professionally manage governmental funds, and also has the experience of managing the relationships with governmental organisations. The IEED also has built up a track record of engaging in governance activities and taking an active role in the economic development of the North West region through its entrepreneurial and educational actions such as the long running LEAD programme. Because of these past experiences and accumulated knowledge as a result the department was in the position approach the UK government with the idea for the W2GH programme and secure the £32 million in RGF funding. The importance of assembling a workforce with the right skills and knowledge to engage successfully in governance activities should not be underestimated. It may be necessary, as was the case in Lancaster, to assemble a team with experience of working in government and the private sector as well as in academia. Also, some training and staff development to work in this different domain may be necessary if they are accustomed to working in a pure research environment. As the following comments show, the reception to the University's management of the programme has thus far been very positive and value seems to be being added:

“It is clear that the LU team has thought about the ways beneficiary LEPs need to work when designing the programme. The guidance and training are exceptionally useful. The decision to utilise sharepoint was a stroke of genius. There is much that other organisations administering funding could learn from the LU team.”

“The support from LUMS so far has been superb”

“Secretariat is proving very helpful in clarifying operational queries”

Implications for Academic Institutions

Because the University is not an elected organisation, subject to political tides, it has a degree of longevity and stability above and beyond a governmental department or quango (quasi-autonomous non-governmental organisation). This leads to universities acting as anchor institutions in their localities, with a long history of contributing economically, socially, and culturally. As explained above, economic governance activities are becoming increasingly important as part of universities' missions and a focus of governmental policy, but universities have a long history of adjusting their missions and ensuring that they are seeking sources of funding to sustain their core activities, and this is becoming increasingly pertinent under current funding changes (Goddard et al., 2014). In short, universities are accustomed to adapting to changing tides and trends, and to adding new mission or adjusting old ones as required. The challenge is to balance these various missions, and to ensure that they are complementing rather than competing with each other.

Partaking in governance activities enriches the stream of research activities in the department. Whilst research can feed into the practice of policymaking and implementing, this in turn can feed back into the research conducted. Academics in IEED have unprecedented access to policymakers, business stakeholders, representative organisations, chambers of commerce and many more organisations through managing the RGF programme, allowing rich data to be collected in a number of different fields. This provides an opportunity for researchers to access more data, and to ensure that their research achieves maximum impact and use to those involved “on the ground” practicing economic, entrepreneurship, and innovation support. Another benefit for the university is that through partaking in these kinds of activities another funding route becomes available. For instance, in the case of the RGF programme, IEED was able to increase its research activity by employing four new researchers to carry out research on the programme. This in turn can lead to the department gaining research income through higher outputs, thus broadening and deepening resources, securing the viability and sustainability of the department itself. The potential to build networks with policymakers and practitioners, and to increase the impact of the research being conducted is of vital importance, especially in an academic environment where the impact agenda becomes more and more important, and indeed linked to funding.

A huge challenge is thus faced by universities in managing the different missions and transitions between them. As noted by (Uyarra, 2010, p.1241), universities are acting on the desire to be “good citizens” through the promotion of economic development in their regions, but this raises serious concerns over potentially unrealistic expectations about their ability to balance a broad range of new tasks against their traditional core missions. This can raise problems if the newer activities are not well balanced and/or integrated into the university’s existing work. “Bolting on” new activities, “without fundamental restructuring and re-orientation” could be problematic (Youtie & Shapira, 2008: p.1202). It is important that universities do not lose their core mission and purpose of providing teaching and conducting research. There is a potential danger if too many resources and attentions are side-lined into economic governance, or wider engagement activities, the quality of the first two missions may suffer. Furthermore, from the perspective of the staff at the university, there may be some resistance to engaging in alternative activities, especially if they already feel that their time and resources are strained enough through conducting both teaching and research. The ideal scenario is if the various missions complement each other, rather than compete with each other for resources. For example, considering the RGF experience, the challenge is to bring the research and the undertaking of the programme together, using these engagement and governance activities as a source of data and also a means to achieve higher levels of impact.

Conclusion: *Maximising* the Positive Impact of Universities in the Governance of Regional Economic Development

This paper has considered the move towards the “engaged university” through the case study of Lancaster University, specifically the IEED, which has a history of partaking in the governance of regional economic development in its home region of the North West, and indeed across the whole of the UK since the inception of the RGF project. By considering the experience of partaking in economic governance activities, the Lancaster case study has been used to elucidate some lessons and best-practice about the pros and cons of engaging in this type of activity. By considering Lancaster’s experience, some benefits have been highlighted for universities engaging in this sphere of activity and also some potential pitfalls or problems highlighted. This will help the university going forwards to learn from its experiences, and propose some potential solutions to other universities facing similar issues.

Key benefits are identified in terms of better regional economic development governance, representing ways in which universities can add value in this sphere of activity. The university can take the role of an enabler and facilitator, bringing together the different stakeholders involved in the governance of regional economic development programmes, and enabling interactive learning to take place. The university can facilitate sharing and communication of ideas on an equal footing, using its neutrality as an advantage. Also, because of its longevity and political neutrality, the university can act as a stable “anchor institution” supporting the regional economy over the long term, shielded to a large degree from the political cycles that so often affect actions to address economic development and entrepreneurship. There is an opportunity for the university to add value to programmes and interventions through its ability to evaluate and provide academic insights into the policymaking process, and also through good governance of programme using skills and competencies gained through considerable experience in administering funds and managing projects. It is argued that because of these benefits of universities being involved in the governance of regional economic development, the governance capabilities of the region can be raised and more effective supports and actions can be delivered. Through involving more institutions and organisation in the governance of economic development, beyond narrowly “the government”, a more participatory and sustainable approach to encouraging economic development and entrepreneurship can be achieved.

Benefits for the university through partaking in economic governance activities are also recognised. Perhaps most importantly, the university partakes in another form of engagement and maximises its positive impact on its surrounding region. Through acting as a regional animateur the university is partly justifying its existence and the use of public funds to support it in the future. Indeed, securing another avenue of funding is a benefit of engaging in governance activities, especially if it can help to fund research activity as is the case in the RGF example. Through conducting research alongside the running programmes, researchers at the university are able to secure access to data and informants (such as policymakers and businesses) that they may not otherwise be able to. In turn, researchers can feed the findings of their work back into developing programmes and actions, thus increasing the impact potential of their work. As such, the involvement of universities in economic governance activities can provide a “win-win” if managed well.

However, it is clear that engaging in multiple spheres of activity, including economic governance activity, is not a simple or straightforward task. There are a number of issues or potential problems that could arise, as were experienced in the RGF case: managing relationships, establishing legitimacy in the governance sphere, and balancing the different missions of the university. These challenges can be dealt with through awareness and careful consideration of the issues, and taking measures to address them from the outset. The university needs to adapt and evolve as it widens its engagement activities, ensuring that it is moving in a coherent direction rather than “bolting on” additional activities without embedding them into the existing core missions of teaching and research. It is important that universities stay true to their core purpose, and continue to affect as positive an influence on their regions and localities through a range of different engagement activities. Moving in the direction of economic governance may be something of a step into the unknown for universities, and as such is likely to throw up a number of challenges to be dealt with. However, it is the argument of this paper that if managed and governed well, the benefits of engaging in these wider engagement activities, and the potential to have as positive an impact on the surrounding region, outweigh challenges that may be faced.

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A Longitudinal Perspective on Opportunity Creation

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A Longitudinal Perspective on Opportunity Creation

Principal Topic

The creation of economic wealth has long been associated with the creation of new opportunities by entrepreneurs (e.g. Knight, 1921; Schumpeter 1939; Shane & Venkataraman, 2000). Entrepreneurship scholars emphasize that opportunity creation is processual (Alvarez, Barney & Anderson, 2013) and research shows that the process involves overcoming resource limitations, integrating new information into current ideas, and gaining commitment from diverse market actors (Baker & Nelson, 2005; Dimov, 2011; Sarasvathy, 2001). Despite the recognition that opportunities can be reframed and retracted (Dimov, 2011; Lichtenstein, Dooley & Lumpkin, 2006) and that time is “conspicuously absent from empirical work” (McMullen & Dimov, 2013: 1482), extant research underplays the inherent instabilities in the opportunity creation process.

The purpose of this paper is to extend our understanding of the dynamics of opportunity creation, through a longitudinal examination of stabilizing and destabilizing factors and their consequences. Specifically, our research questions are; “Why do opportunity creation processes vary in duration?” and “What are the consequences of a shorter vs. a longer duration?” In examining these questions, we conceptualize the opportunity creation process as starting from an idea and ending with a stable business model.

Method

Given the lack of extant research on the dynamics of opportunity creation, we used an inductive approach drawing on qualitative data to develop new theoretical insights (cf. Edmondson and McManus, 2007). We selected for study two extreme cases (Eisenhardt & Graebner, 2007; Siggelkow, 2007) that differ substantively in terms of the duration of opportunity creation, but are similar in terms of starting conditions and early milestones: Airbnb and Twitter.

Archival data forms the core of the empirical material collected. To establish each firm’s purported positioning in the marketplace over time, and to understand how each firm discussed the evolution of its opportunity, we collected all blog posts created by both companies from founding through to the end of 2013 (590 posts totalling 373 pages of text for Airbnb; 2,176 posts totalling 1,438 pages of text for Twitter). We also collected taped interviews of the founders during this time (24 interviews totalling more than 6 hours for Airbnb; 47 interviews totalling more than 16 hours for Twitter). To gain the perspectives of commentators outside the firm, we collected all media coverage about these two firms during this same period from the general business press (The Economist, Forbes, Fortune, Wall Street Journal), the popular media covering internet-based firms (Fast Company, Wired), a well-respected San Francisco-based subscription-based blog commentary on disruptive technology (GigaOM), and a San Francisco-based curated technology news aggregator (TechMeme). The media coverage data constitutes 254 articles (262 pages of text) for Airbnb and 2,388 articles (3,020 pages of text) for Twitter.

We approached data analysis through an in-depth comparative analysis of similarities and differences between the two cases (Eisenhardt, 1989). We identified the questions regarding the factors influencing opportunity creation duration through an exploration of patterns in the data collected (Strauss & Corbin, 1988). This exploration included four separated analytical steps designed to facilitate understanding ambiguous aspects of the data while avoiding unwarranted analytic biases.

Results and Implications

Our analysis revealed that the opportunity creation processes at Airbnb and Twitter differed most fundamentally with respect to a new theoretical construct which we label “opportunity liminality.” We label an opportunity as liminal if its business model is still mutating. The Airbnb opportunity was liminal for one year after start-up, while the Twitter opportunity was liminal for at least six years; some commentators view it as still being in flux. In selecting the label “liminality” we drew on anthropological research on liminal phases in rites of passages (van Gennep, 1961; Turner 1977, 1982), characterized by a release from pre-existing boundaries and norms so that new social constructions become possible.

We found that six processes influence opportunity liminality. Three processes reduce liminality: (a) territorializing the opportunity (e.g. setting boundaries; reducing the heterogeneity of value proposition(s)); (b) weighting the opportunity (e.g. having a large and growing base of stakeholders such as users, market actors in the technological ecosystem and investors; being entrenched in popular culture); and (c) materializing the opportunity (e.g. with physical or digital connections to other businesses; via comparisons with rivals in the press). Three processes extend liminality: (a) broadening the opportunity (e.g. by adding value propositions; widening the scope of the business model); (b) contesting the opportunity (e.g. by disputes over what the business model should be, both internally among the management team and with external stakeholders); and (c) constraining the business model (e.g. by government action or regulation; by actions from rivals that prevent the firm from claiming a unique value proposition).

Our analysis also revealed consequences to liminality and we use these as a basis for generating empirically- and theoretically-informed propositions. Our results indicate that greater liminality renders it more difficult to develop a coherent organization identity and coherent organizational narratives, and that it results in more paradoxes across stakeholders. However, lower liminality results in earlier direct competition as entrants can more easily position themselves against, and imitate, a less liminal opportunity. Further, opportunity liminality influences growth tactics: we expect the firm to grow by acquiring new capabilities, in order to perform new activities, when the opportunity is more liminal, whereas when the opportunity is less liminal, we expect the firm to grow by acquiring more customers to leverage a stable business model.

The Endogenous Nature of Entrepreneurship: How Capital Structure Changes Influence Who Identify and Exploit Entrepreneurial Opportunities

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The Endogenous Nature Of Entrepreneurship: How Capital Structure Changes Influence Who Identify And Exploit Entrepreneurial Opportunities

ABSTRACT

Entrepreneurs create and appropriate value by designing a system of interconnected and interdependent activities that determine how they do business. These activity systems span beyond the individual firm and compose complex interconnected ecosystems. Current research focuses on how entrepreneurs design new activity systems but do not focus on how these changes create new entrepreneurial opportunities and for whom. In this paper we ask why some people but not others identify and exploit entrepreneurial opportunities following changes in an activity system. Based on Lachmann's theory of capital we develop a theoretical framework for analyzing how changes in the structure of activities in terms of knowledge substitution affect the knowledge required to identify and exploit opportunities by focusing on the role of complementarities and multiple specificities of capital resources. The results have implications for our understanding of the endogenous nature of entrepreneurship and the coevolution of business model innovation and innovation ecosystems.

1 INTRODUCTION

In his early work Joseph Schumpeter (1934) focused on the role of the entrepreneur in changing the economy from within. He argued that entrepreneurs create new value through innovation by changing the structure of the economy in a fundamental way. Initially, the entrepreneur will be able to appropriate a large share of this value but with time profit will be eroded by imitation. From this follows that an entrepreneur who wants to continue to profit must continue to innovate, suggesting an endogenous process of economic growth and development.

Two important qualifications have been made to Schumpeter's model based on historical studies of technological innovation (Rosenberg 1976, 1982). First, the innovation process is rarely characterized by instantaneous breakthrough and discontinuity but is typically a time consuming process composed of many small steps before an invention or an idea becomes commercially viable. Second, what Schumpeter terms as imitation is seldom a mere reproduction but rather includes creative adaptations and improvements on par with the steps that precede it. Seen from this perspective the Schumpeterian process of economic growth and development is a continuous and evolutionary process where entrepreneurial action will change the structure of the economy, and these changes will in turn create new opportunities for entrepreneurial action (Buensdorf 2007).

Traditionally, entrepreneurship research has not focused on this endogenous nature of entrepreneurship. Early on entrepreneurship scholars searched for personal traits that could provide answers to the question who becomes an entrepreneur (cf Brockhaus and Horwitz 1986), but as the results from this search turned out to be inconclusive attention has shifted towards understanding how the interaction between enterprising individuals and available opportunities triggers and shapes entrepreneurial action, i.e. why, when, and how some people and not others identify and exploit entrepreneurial opportunities (Shane and Venkataraman 2000). This shift has generated a stream of research investigating the nature of entrepreneurial opportunities (Alvarez and Barney 2007; Eckhardt and Shane 2003; Sarason, Dean, and Dillard 2006; Sarasvathy, Drew, Velamuri, and Venkataraman 2003, Short, Ketchen, Shook, and Ireland 2010) and the characteristics of the opportunity process (Ardichvili, Cardozo, and Ray 2003; Barreto 2012; Choi and Shepherd 2004; Dimov 2007; Gaglio 2004; Haynie, Shepherd, and McMullen 2009; Mitchell, Mitchell, and Smith 2008; Shepherd, McMullen, and Jennings 2007).

Recently, a stream of research has become interested in how entrepreneurs create and appropriate value by designing systems of interconnected and interdependent activities that determine how they do business (Zott and Amit 2010; Zott, Amit and Massa 2011). These activity systems span beyond the individual firm and compose complex interconnected ecosystems (Adner and Kapoor 2010). This research provides a language for describing how entrepreneurs change the economic structure by designing their activity systems but does not address how these changes create new opportunities for entrepreneurial action and for whom.

The purpose of this paper is to help fill this gap. We ask why some people, but not others, identify and exploit entrepreneurial opportunities following changes in an activity system. We base our analysis on Lachmann's (1956/1978) theory of capital and Menger's (1871/1976) original work on goods of different order to connect development of knowledge, entrepreneurial action and qualitative changes in the capital structure of the economy. We develop a theoretical framework for analyzing how changes in the structure of activities affect the knowledge required to identify and exploit opportunities by focusing on the role of complementarities and multiple specificities of new capital resources used to perform activities. We use the framework to derive two propositions that can be used to empirically test the theory. Finally, we conclude our analysis and discuss the implications of our results for entrepreneurship research.

2 CAPITAL STRUCTURE, KNOWLEDGE, AND ENTREPRENEURIAL ACTION

The concept of a capital structure is typically viewed as a network structure of man-made means of production (Lachmann 1956/78). While some economists strive to homogenize the concept of capital through a common measurement unit (price, interest) in order to make it more suitable for quantitative economic analysis others stress its heterogeneous nature and how it shapes and is shaped by economic activities.

One approach that stresses the heterogeneous nature of capital is the Austrian theory of capital that has its origins in the work of Carl Menger (1871/1976).⁷¹ Menger made a distinction between goods of different order based on how close or distant causal relationship they had with the satisfaction of wants or needs. Goods of the first order were consumer goods that could be "placed in *direct* causal connection with the satisfaction of human needs." (Menger 1871/1976 p. 57, italics added). Central to Menger's approach was his subjectivist perspective, leading him to stress individual knowledge and awareness of circumstances as being the basis for economic decisions rather than the actual circumstances themselves (Kirzner 1979). The value of consumer goods is therefore based on how well consumers perceive the goods to satisfy their needs, rather than the value of higher order goods, if any, needed for their production. Similarly, the value of higher order goods is based on the prospective value of the consumptions goods to whose production they are to be assigned (Menger 1871/1976, p. 150).

Goods having indirect causal relationship with the satisfaction of human needs are of second, third, or higher order. Complementary goods at higher order can be progressively transformed into goods of lower order until, finally, resulting in the satisfaction of human wants and needs. Goods of higher order thus represent the means of production, including the classical factors

⁷¹ The Austrian theory of capital is not a homogenous school of ideas. The main difference that is of importance for this paper is to what degree it follows the subjective focus of Menger's approach and thus includes a role for entrepreneurial action. One stream can be discerned through the works of Böhm-Bawerk, Wickseil, Hicks and later neo-Austrians where the subjective focus is quickly eliminated. The second stream of works by Hayek, Lachmann, von Mises and Kirzner is more adherent to the subjective approach (See Garrison 1990 for an overview of this difference and its early development).

of land, labor, and capital⁷², available to satisfy wants or needs. The whole economy is therefore composed of a complex structure of means-ends relationships where the placements of each higher order good is determined from the causal connection between a good and wants and needs, and from existing means of production. There is not a natural, given ranking of the order of any goods in this structure as the ranking is determined solely from a user and a factual production perspective.

Lachmann (1956/1978) furthers Menger's idea into a theory of capital structure. He argues that capital resources are heterogeneous in use and cannot be combined in an arbitrary fashion. The purposes for which capital resources can be used depend on how they can be combined with other resources and activities. Certain modes of *complementarity* are technically feasible, and only a subset of them is economically viable. However, the economic significance of a capital resource is dependent on to what degree it is *multiple specific*, i.e. to what degree it can be used for several different purposes. For example, a technology platform that is used in a number of different types of products has higher multiple specificity than a platform used only for a particular type of products. Together, multiple specificity and complementarity provide the order of the capital structure, i.e. how capital resources and economic activities are structured to meet human needs.

The entrepreneur has a very explicit role in Lachmann's theory (Lachmann 1956/1978, p. 13-16, p. 20-24). Entrepreneurs form expectations about the future based on their subjective interpretation of past experience. Expectations are "provisional judgments to be confirmed by later experience, imperfect knowledge capable of being perfected." (p. 21). They are a part of ongoing process of acquiring knowledge about peoples' needs and the means to satisfy them in an economical way (p. 24). This ongoing process is reflected by changes in the capital structure, where entrepreneurs may choose to disintegrate existing capital combinations or create new ones based on their personal knowledge and expectations.

Changes that are exogenous to an actor, such as disruptive changes in needs or technology, will make possible or even compel changes in the use of capital resources, which creates opportunities for the actor to take economic advantage of pursuing these changes. However, changes in the capital structure will themselves also create entrepreneurial opportunities by making some capital combinations less likely to be used after such a change, others more attractive, and even opening up for new ones.

The ability to identify, and the willingness to take advantage of, the opportunities that these changes bring is based on the prior knowledge of available entrepreneurs as well as their motivation (Barreto 2012, Dimov 2007, McMullen and Shepherd 2006, Shane 2000). Because of this some individuals are more likely than others to take advantage these opportunities, and furthermore, for some individuals the likelihood of entrepreneurial action has increased because of the change, whereas for others the likelihood has decreased.

In other words, the capital structure is an ever changing structure of means-ends relationships aiming to satisfy human needs. Capital resources are combined in an ordered albeit not a (fully) predictable manner based on the complementarities and multiple specificities of the resources themselves on the one hand, and the expectations, knowledge and actions of entrepreneurs on the other. Over time entrepreneurial action both shapes and is shaped by the capital structure in an endogenous manner where entrepreneurs are both makers and takers of opportunities for value creation and appropriation.

⁷² Capital goods are traditionally defined as man-made means of production, i.e. in Menger's terms they would be considered man-made goods of higher order.

There are many similarities between Lachmann's conceptualization of the capital structure and the concept of an activity system that spans the boundaries of the individual firm. An activity is viewed as "the engagement of human, physical and/or capital resources of any party to the business model (the focal firm, end customers, vendors, etc.) to serve a specific purpose toward the fulfillment of the overall objective." (Zott and Amit 2010, p. 218). Both capital structure and activity systems can be seen as a structure of means-ends relationships that serves the purpose of creating and appropriating value and in both cases the entrepreneur has an active role in shaping it.

In the next section we spell out how Lachmann's theory can be used to predict how changes in activity systems create new entrepreneurial opportunities and for whom. We focus on how available entrepreneurs are takers of opportunities following a specific change in the capital structure, i.e. who is more likely than before to take advantage of the introduction of a new capital resources that affects the human knowledge required for producing particular type of products.

3 INTRODUCTION OF A NEW CAPITAL RESOURCE AND THE IDENTIFICATION AND EXPLOITATION OF SUBSEQUENT OPPORTUNITIES

Lachmann's theory of capital brings together the buildings blocks that are needed for our purposes but there are a number of specific issues that need to be addressed. Most importantly Lachmann (1958/1978) is never very explicit about the relationship between knowledge and the capital structure. Lewin (1996) even argues that while the Austrian economists, such as Menger and Lachmann, stress the importance of knowledge they tend to treat it as an exogenous variable never giving much attention to it as a phenomenon. In our case we need to explicitly specify how the complementarities and multiple specificities of capital resources affect the knowledge requirements for their development and use. To remedy this shortcoming we use Menger's (1871/1976) concept of goods of different order and based on that idea derive the idea of knowledge of different order.

Menger defined goods having indirect causal relationship with the satisfaction of human needs to be of second, third, or higher order. Goods at higher order are being progressively transformed into goods of lower order until, finally, resulting in the satisfaction of human needs. As long as these transformations are not automatic they require labor services by individuals who have the knowledge to carry them out. Drawing on this, knowledge can be seen as attributes of labor services at higher order that are required to produce a good of a lower order. Hence, as for goods of different order we can talk of knowledge of different order that is required for the progressive transformation of goods to meet the satisfaction of human needs.

Menger argued that two conditions need to hold if a good is to have an indirect causal relationship with the satisfaction of needs. First, a command is needed of the complementarity goods of higher order required for its production, both in quality and quantity. Second, the qualities and quantities of the good itself have to fit the complementary goods needed for its transformation into a good of first order that directly satisfies human needs. As we are concerned with the creative aspect of entrepreneurship we are more interested in the complementary qualities of goods and how they are accomplished rather than their complementary quantities, i.e. how well their demand and supply is balanced.

The qualities of a good relate to its role in satisfying human needs, and the prospective value of meeting those needs. The accomplishment of these qualities is based on the complementary

goods and labor services used for their production⁷³. This means that not only is command required of complementary goods that are required to produce the good, but also a command of complementary knowledge at the same order. Similarly, the qualities of the good have to fit both the complementary goods and knowledge needed for its transformation into a good of first order.

Below we develop a model of the introduction of a capital resource using our framework of goods and knowledge of different order. For simplicity, we assume that before the introduction of the new capital resource no capital resource is involved in the production of a certain type of products. Furthermore, we assume that the production is made more economical by using the capital resource as compared to not using it. A real life example roughly adhering to these assumptions is the introduction of web administration tools in the 90s (Reference removed for review).

Let M, N be integers, $2 \leq M, N$. Let us assume that before a particular point in time, T , a set of M^{74} knowledge fields⁷⁵, at the N th order ($K_1^N, K_2^N, \dots, K_M^N$) is needed to produce a class of goods of the $N-1$ order (G^{N-1}). By a class of goods we mean a category of goods that meet certain ends, but may differ in how well they do so. As $N \geq 2$ the goods at the $N-1$ order may be goods at the first order that directly satisfies human needs or wants, or of higher order that does so indirectly through its complementary with goods at the same or lower order.

Let us assume that a new capital resource at the N th-order, termed the capital resource CR^N , becomes commercially available at time T' , $T' > T$. The capital resource CR^N can be used to replace knowledge field 1 to j , j integer ≥ 1 which was previously required to produce the class of goods at the $N-1$ order (G^{N-1}). This means that when using CR^N to produce G^{N-1} labor services from individuals mastering knowledge fields 1, 2, ..., j are not required. For brevity we will term knowledge fields K^i , i integer ≥ 1 , $i = 1, 2, \dots, j$ as the abstracted knowledge fields, and knowledge fields from $j+1$ to M as the non-abstracted knowledge fields.

The degree of knowledge substitution, or in other words the abstraction, by a capital resource affects its complementarity in terms of how easily it can be combined with other capital resource and labor services. Higher degree of knowledge substitution reduces the scope of knowledge fields required to use the new capital resource in combination with other capital resources and labor services. A higher degree of knowledge substitution provides stronger information hiding, or modularization, enabling a relatively simple transfer of energy, materials and information when interacting with other capital resources and labor services (Baldwin 2008). Lower degree of knowledge substitution, on the other hand, is associated with weaker information hiding and less difference between the knowledge fields needed to produce the capital resource and the knowledge fields needed to use it in combination with other capital resources.

The degree of knowledge substitution enabled by the use of a capital resource is determined by two dimensions. First, the knowledge substitution is determined by the number of knowledge

⁷³ Here the concept of production includes both the development of a good and its delivery to a customer. The ability to develop a good is the ability to perceive and specify a delivery process (in some cases including manufacturing) of a good having certain qualities. The ability to deliver is the ability to implement the delivery process repeatedly.

⁷⁴ All of the M knowledge fields need to be used in order to produce the good of a lower order because of the complementarity in use.

⁷⁵ By knowledge fields we mean reasonably distinct areas of expertise. A reasonable distinction between areas of expertise means that individuals that have been born with the same ability to master the topic cannot obtain that expertise within a time frame; rather it takes a long time of education or on the job training to obtain it.

fields previously required to identify and exploit entrepreneurial opportunities of a certain class that are being replaced by using the capital resource. The higher number of knowledge fields being replaced, ranging from only one field being replaced to all but one being replaced, the higher is the degree of substitution and the more general the capital resource is in use. Second, the knowledge substitution is determined by how well the knowledge fields that are being replaced by the capital resource are decoupled from the knowledge that is needed to use it in conjunction with the remaining knowledge fields. When the decoupling is low the same knowledge fields are needed for both development and use. This is equivalent to viewing the complexity of an entrepreneurial problem to be non-decomposable, forcing close interaction among knowledge fields to solve a problem within an organization (Nickerson and Zenger 2004). Hence, there is little change in the knowledge fields needed to pursue entrepreneurial opportunities even when using the new capital resource. When the decoupling is high, the details of the production of the capital resource are suppressed during its use. The user of the capital resource is able to ignore or may be unaware of a number of “messy” details which are important for its production. Instead, they are able to use the capital resource through a simplified interface with little knowledge within the knowledge fields that it encapsulates. Taken together the degree of substitution of a capital resource introduced at the Nth order is a measurement of the possible increase in specialization in labor services at the Nth order, i.e. to what degree is it possible to identify and exploit opportunities using a narrower set of knowledge fields than before the introduction⁷⁶.

But what are the effects of the degree of substitution on *who* will exploit entrepreneurial opportunities related to G^{N-1} ? Let us investigate these effects by studying the polar case of highest and lowest degree of substitution, assuming there is a continuum between them.

The highest degree of substitution is obtained when all knowledge fields except one are being replaced, and individuals having knowledge within that field are able to use the capital resource without any knowledge within the fields being encapsulated by it.⁷⁷ In this case, by definition, knowledge within only a single field is sufficient to identify and exploit entrepreneurial opportunities related to G^{N-1} . This lowers the cognitive barriers of entry for individuals having prior knowledge within that field, adding to the pool of potential entrepreneurs those individuals that are not able, or willing, to team up with individuals having prior knowledge within the abstracted fields. As we assume that using the capital resource is more economical than using the corresponding labor services our first proposition becomes:

Proposition 1: Individuals having prior knowledge within the knowledge fields not abstracted by CR^N are more likely than before to identify and take advantage of opportunities related to G^{N-1} the higher the degree of knowledge substitution by CR^N .

While the level of knowledge substitution will influence the extent to which individuals specializing in the non-abstracted knowledge fields are more likely than before to identify and take advantage of entrepreneurial opportunities related to G^{N-1} , the degree of multiple specificity of the capital resource will influence to what extent individuals specializing in the abstracted knowledge fields are more or less likely to do so.

⁷⁶ Here we assume that motivation to exploit entrepreneurial opportunities is not affected by the introduction of the capital resources, i.e. differences in ability to identify and evaluate the opportunity is the only factor affecting differences in the willingness to bear the uncertainty inherent in entrepreneurial action (McMullen and Shepherd 2006).

⁷⁷ Note that this ideal case is unlikely to exist in reality as some additional knowledge is needed to be able to use the capital resource, even users do not have to be competent within the knowledge field it encapsulates.

Capital resources are multiple specific in the sense that they can be used only for a limited number of purposes. The higher the degree of multiple specificity, the larger number of purposes can it serve. This means that if the capital resource CR^N has low levels of multiple specificity, for example when it can only be used to produce product of the class G^{N-1} , the knowledge fields needed for the production of the capital good is highly specific to G^{N-1} . However, if the capital good CR^N has high level of multiple specificity the market for its use is potentially larger as it can be used for the production of a number of other goods apart from G^{N-1} . In that case opportunities for innovation are less specific to G^{N-1} and individuals having prior knowledge within the abstracted knowledge are less likely than before to specialize in pursuing opportunities related to G^{N-1} . All other things being equal this leads us to our second proposition:

Proposition 2: Individuals having prior knowledge within the knowledge fields abstracted by CR^N are less likely than before to exploit opportunities related to G^{N-1} the higher the degree of multiple specificity of CR^N .

In Table 1, we provide a summary of our propositions in terms of what characterizes changes in likelihood of actors to identify and take advantage of opportunities based on their prior knowledge relative to the degree of knowledge substitution and multiple specificity of the new capital resource.

We argue that following an introduction of a new capital resource, two dimensions affect who will identify and exploit subsequent opportunities. When the knowledge substitution by the capital good is high and it has a high level of multiple specificity individuals specializing in the non-abstracted knowledge become more likely than before to identify and exploit entrepreneurial opportunities, while individuals specializing in the abstracted knowledge are less likely.

Table 1. Who will identify and exploit opportunities following introduction of a new capital resource

		Knowledge substitution	
		Low	High
Multiple specificity	Low	Same as before	Individuals having prior knowledge within the non-abstracted knowledge fields are more likely.
	High	Individuals having prior knowledge within the abstracted knowledge fields are less likely. Individuals without prior knowledge not affected.	Individuals having prior knowledge within the non- abstracted knowledge fields are more likely than before. Individuals having prior knowledge within the abstracted knowledge fields are less likely.

4 DISCUSSION AND CONCLUSION

The aim of this paper is to contribute to explaining why some people but not others become entrepreneurs. More precisely, we asked why some people, but not others, identify and exploit entrepreneurial opportunities following changes in an activity system. We structure the activity

system by means of Lachmann's theory of capital to develop a theoretical framework for analyzing how changes in the structure of activities affect the knowledge required to identify and exploit opportunities.

We focus on the role of complementarities and multiple specificities of capital resources. The complementarity of a new capital resource is dependent on the knowledge substitution it enables. Higher degree of knowledge substitution reduces the scope of knowledge required to combine it with other resources and labor services for a particular purpose. Multiple specificity of a capital resource refers to what degree the resource can be used for different purposes. Resources with higher level of multiple specificity can be used for higher number of different purposes, i.e. they have more general application in the economic system.

We propose that when an activity system is changed by the introduction of a new capital resource the complementarity and multiple specificity of the resource affects who is likely to identify and take advantage of subsequent entrepreneurial opportunities. We divide potential entrepreneurs in two groups. One group includes individuals endowed with knowledge within the fields being substituted by the capital resource (abstracted knowledge fields). The other group includes individuals endowed with knowledge fields that are not substituted (non-abstracted knowledge fields). We propose that as complementarity is increased through higher knowledge substitution individuals holding non-abstracted knowledge are more likely than before to identify and take advantage of the opportunities. We also propose that as multiple specificity of the resource increases individuals holding abstracted knowledge are less likely to do so.

In this paper we have only laid the groundwork for better understanding the endogenous nature of entrepreneurship, i.e. how entrepreneurial activity is shaping and is shaped by changes in the economic system. We encourage further development of our framework and empirical studies that further specify changes in activity systems and the identification and exploitation of subsequent opportunities. We also believe that our group of potential entrepreneurs can be extended to include related knowledge fields not currently used for the production of the type of products under consideration. Similarly, we believe our approach is not only helpful for understanding entrepreneurial action where entrepreneurs are takers of opportunities, but also action where entrepreneurs are makers of opportunities.

We argue that more research along these lines is important for entrepreneurship research for several reasons. First, it may be able to better predict Schumpeterian swarming following changes in an activity system, i.e. the rate and direction of imitation following an innovation (Schumpeter 1934). Not only is this phenomenon of interest for researchers and policy makers, but also for entrepreneurs as designers of new business models (Zott and Amit 2010) who are interested in the competitive advantage of the focal firm and business managers who want to remove bottlenecks their innovation ecosystems (Adner and Kapoor 2009). Second, as our approach is based on the general notion of goods and knowledge of higher order we believe it has a very general applicability in terms of activity system changes. To date we have used it for empirically studying the effects of the introduction of new software tools (Reference removed for review) but we believe it can be extended to include other kinds of capital resources, both tangible and intangible, such as platform technologies, manufacturing methods, business development methods, etc.

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Emotion Regulation Strategies in Family Businesses

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Emotion Regulation Strategies In Family Businesses

Socio-emotional wealth is a critical resource for family businesses (Berrone, Cruz, & Gomez-Mejia, 2012) ensuring their success and continuity. A family business' socio-emotional wealth is dependent interpersonal relationships of family co-workers (family members who work in the family business). During interpersonal interactions a family co-worker's expressions of emotion can influence the emotion state and subsequently the behaviour of other family co-workers (Glaser et al., 2006). More importantly in the long term, these expressions of emotion facilitate smooth interpersonal interactions and help to maintain positive relationships in the workplace and the family (Van Kleef et al, 2009). Family businesses, with their unique overlap of family and business contexts and the bivalent nature create a context where emotions can have a strong positive or negative impact on the individual, the family and the business.

Emotions have a key role in motivation, behaviour and social interactions of people. They arise when an individual encounters a situation and identifies it as important to his/her goals. Koole (2009 : 6) defines emotion regulation as "the set of processes whereby people seek to redirect the spontaneous flow of their emotions". Such regulatory process can be applied to positive and negative emotions, and can span both intrinsic (regulation of emotions in self) or extrinsic (regulation of emotions in others) aspects of emotion regulation. In this study, we focus on regulation of emotions in self. We base our study on the process model of emotion regulation (Gross & Thompson, 2007). This model of emotions illustrates that emotions follow a Situation-> Attention-> Appraisal-> Response sequence . While emotions are experienced as a process, individuals can undertake emotion regulation processes at any point during this process. Thus, the process model argues that different emotion regulation processes may be activated in different stages of the emotion generation process (Gross & Thompson, 2007). These emotion regulation strategies can be classified into two broad categories, a) Antecedent focused strategies which are implemented before the emotional experience is fully activated, and b) Response focused strategies, which are implemented after the emotion is already under way. Antecedent focused strategies include situation selection, situation modification, attention deployment and cognitive reappraisal (Gross, 1998; Gross, 2013; Gross & Thompson, 2007). Response focused strategies include suppression, redirection and evoking.

To understand how family co-workers use emotion regulation processes in the interpersonal interactions in the family business context, we undertook a qualitative study. We interviewed 41 family co-workers using a semi-structured interview protocol. Interview responses were digitally recorded, transcribed and analysed using a directed coding approach whereby we started with an initial coding template based on our reading of the emotion regulation literature and accommodated additional codes as they emerged from the data.

We found that family co-workers used separation and boundary definition as an antecedent focused situation selection and modification strategy to reduce the potential for confrontations and resultant negative emotions. Such separation and boundary definition took form of (a) geographical/physical separation (b) functional separation and (c) work family separation. Some family co-workers also reported that reduced communication (either at work or at home) was used as a strategy to avoid emotion provoking situations. Attention deployment strategies took place in forms of (a) focusing on other issues such as work or

exercise (b) physical withdrawal of attention. We also found that some family workers managed to park the emotions such that they deployed attention on work matters till they were in a position to resolve the emotional situation. The cognitive reappraisal strategies involved de-emphasizing the importance of the issue and use of a time lag think about the situation before responding. Finally, the response focused strategies included (a) suppression of emotion, (b) redirection whereby the individual waited to find an appropriate context to express the emotion, and (c) evoking strength and positive emotions.

Our findings illustrate how family co-workers regulate emotions during interpersonal interactions with other family members. Their emotion regulation influenced their own emotional wellbeing but also played a critical role in maintaining functional relationships among family co-workers. Thus we draw attention of the researchers and practitioners to the critical role played by emotion regulation of family co-workers.

While our study identifies emotion regulation strategies in the context of Australian family businesses, it is but an exploratory study . The impact of the emotion regulation strategies may impact the individual as well as the family and the family business. A deeper study probing a variety of factors at can further help us identify functional and dysfunctional strategies that impact both the family and business context of the family business.

Family co-workers interact with each other in both the work and family contexts. Therefore strategies for managing emotions can play a key role in family co-worker interactions, critically shaping the interpersonal relationships. Family relationships, fuelled by passions and emotions, play an important role in survival, functioning and performance of family businesses (Aldrich & Cliff, 2003; Craig & Salvato, 2011; Dyer & Dyer, 2009). Emotion management strategies have a strong impact on interpersonal interactions and relationships, and emotion regulation strategies of family co-workers impact not just the individual, their interaction partners but also the family and the business. Further, the emotions also impact the non-family employees in the family business (Stanley, 2010). A vast majority of business in Australia and worldwide, is family business and understanding strategies that can help family co-workers better manage their relationships.

'Know-what' 'Know-how' and 'Know-who' – Exploring Entrepreneurial Learning in an Entrepreneurship Education Program

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‘Know-What’, ‘Know-How’ And ‘Know-Who’ – Exploring Entrepreneurial Learning In An Entrepreneurship Education Program

Abstract

This paper investigates the integration of entrepreneurial learning content and processes and how this integration affects the overall entrepreneurial learning experience. In particular, it aims to “illuminate the black box of entrepreneurship education programs” (Maritz and Brown, 2013) by examining in detail, the relative importance of the three components of entrepreneurial learning that Gibb (1993, 1997) has labelled, ‘know-what’, ‘know-how’ and ‘know-who’. The study involved thematic analysis of semi-structured interviews with 20 participants in a contemporary entrepreneurship education program that is delivered using ideas such as Design Thinking, the Business Model Canvas and Lean Startup methodology. We find that although the emphasis of the program was on ‘know what’ (e.g. rapid prototyping) and ‘know how’ (e.g. how to develop a business model), the participants found that the ‘know who’ component was most significant in their learning. In particular, they found the mentors and experts that were assigned to them especially helpful in shaping their learning and in developing their entrepreneurial networks. Moreover, our results show that the processes of ‘know-what’, ‘know-how’ and ‘know-who’ are interrelated - by knowing ‘who’ participants learnt ‘what’ and ‘how to’. The paper makes the important contribution to entrepreneurial learning theory by providing evidence of that ‘know-who’ is just as important as ‘know-what’ and ‘know-how’ as ‘know-who’ can actually provide entrepreneurs with the means to access ‘know-what’ and ‘know-how’.

Introduction

Since the 1990s, Entrepreneurship education programs (EEPs) have grown in number, size and scope in Australia (Daly, 2013) and also other parts of the world. Many of these programs use a variety of pedagogical techniques to teach the participating entrepreneurs a broad spectrum of content (Maritz and Brown, 2013) with little evidence on the efficacy of these programs (Kuratko, 2005; Rae, 2012). Besides making it confusing for potential entrepreneurs, this ‘scatter-gun’ approach negatively affects the overall impact of EEPs (Pittaway & Cope, 2007) with the result that the majority of them may do nothing to enhance entrepreneurship skills and motivation (O’Connor, 2012). Furthermore, there is a lack of consensus as to what components are most effective in providing entrepreneurial learning and therefore as to what content should be taught and what processes should be used in entrepreneurship education (Gibb & Cotton, 1998; Matlay, 2008; Pittaway & Cope, 2007; Alberti et al, 2004; Bygrave, 1993).

Therefore, the objective of this paper is twofold. Firstly, we examine the extent and nature of the three components of entrepreneurial learning that Gibb (1993, 1997) has labelled ‘know-what’, ‘know-how’ and ‘know-who’ in an entrepreneurship education program. And secondly, we examine how these three components are interrelated. We find that although the emphasis of the program was on ‘know what’ (e.g. rapid prototyping) and ‘know how’ (e.g. how to develop a business model), the participants found that the ‘know who’ component was most significant in their learning. Furthermore, our results show that the processes of ‘know-what’, ‘know-how’ and ‘know-who’ are interrelated - by knowing ‘who’ participants learnt ‘what’ and ‘how to’ and in particular, mentors and experts were able to help improve entrepreneurial learning by integrating learning content with learning processes. The paper makes the important contribution to entrepreneurial learning theory by providing evidence that ‘know-

who' is just as important as 'know-what' and 'know-how' as 'know-who' can actually provide entrepreneurs with the means to access 'know-what' and 'know-how' (Gibb, 1997).

Literature review

Entrepreneurship Education Programs

Fayolle et al (2006, p. 702) defined entrepreneurship education programs (EEPs) as “any pedagogical program or process of education for entrepreneurial attitudes and skills, which involves developing personal qualities”. Matlay (2009, p. 382) focuses more on outcomes, defining that “their primary goal is to increase the quantity and quality of entrepreneurs, influence entrepreneurial behaviour, entrepreneurial tendency and entrepreneurial outcomes.” This study aligns itself with Matlay (2009) defining an EEP as any entrepreneurial program that is looking to increase the quantity and quality of entrepreneurs in the economy. This is done by attracting and motivating potential entrepreneurs and by influencing their behaviour (what they do and how they do it) through the provision of education and training. It also defined that they should quintessentially be looking to affect the entrepreneurial outcomes of nascent entrepreneurs in a positive manner by enabling them to more often produce success, survive and grow in the market place.

The Entrepreneurship Education Black Box

Maritz & Brown (2013) lament that despite the proliferation of EEPs, little is known, about what is actually learned in these programs and how effective the teaching or deliveries of these programs are. They call for research into the “illumination of the black box of entrepreneurship education programs” and on better understanding of the interrelated parts of learning on these programs and the relationships between them. More than a decade previously Gibb & Cotton (1998) argued that there was considerable conceptual confusion regarding what entrepreneurship education is e.g. what it does and should teach, how it should teach it and what it aims to and does accomplish.

According to Alberti et al (2004); Maritz & Brown (2013); Fayolle (2010) and Matlay (2008) there are at least four components that comprise or affect the 'black box'. First is the audience component which refers to understanding who is enrolling in EEP's and how their individual characteristics such as their entrepreneurial or industry experience, age or gender impact upon what and how they learn. Second is the content which refers to what content is actually taught or should be taught in the programs and what the focus of the content should be. Third is the process which is concerned with how the content is or should be taught and what pedagogies are most applicable to communicate the desired content. Last is the assessment which is concerned with how beneficial the various types of content are and how much they impact upon the future entrepreneurial performance of the entrepreneur.

The aim of the research is to contribute to previous literature by exploring two major dimensions of the 'black box', that is what content is taught and what processes are used in teaching it and how both effect EL, as illustrated by the circle in figure 1. The other two components although acknowledged to be important are deemed to be outside of the scope, parameters and possibilities of this research.

'Know-What' and 'Know-How': Traditional Perspectives

'Know-What' and 'Know-How' are captured under the content dimension of entrepreneurial learning which focuses on what knowledge participants actually learn or receive from an EEP. There is little uniformity in program offerings; this is commonly considered to be related to the fact that entrepreneurship is an emerging field (Solomon et al, 2002; Alberti et al, 2004). It is recognised that most EEP's educate 'about' entrepreneurship rather than educating 'for'

entrepreneurship (Kirby, 2006). Only rarely do they focus on developing the skills, attributes and behaviour of the successful entrepreneur (Alberti et al, 2004). In light of this the paper takes the definition offered by Alberti et al (2004, p. 7) that content learning is “any form of knowledge or education offered by the program pertaining to both ‘about’ and ‘for’ entrepreneurship, that is the teaching of theory, history, skills, attributes and behaviour”.

The content of these EEPs can be divided into traditional and contemporary forms. Traditional methods generally refer to a more analytical and prescriptive approach to entrepreneurship whereas contemporary methods refer to a more design and experientially based approach (Osterwalder, 2004). Table 1, summarises the traditional components of ‘Know-What’ and ‘Know-How’ in EEPs.

Insert Table 1 about here

Self-efficacy refers to “people’s beliefs about their capabilities to exercise control over their own activities and over events that affect their lives” (Bandura, 1991). One focus of many EEP’s traditionally has been to try to change the beliefs and attitudes of the entrepreneurs towards such behaviour and finally developing their self-efficacy or belief that they could do or master the behaviour that they were required to do (Bandura, 1991; Fayolle and Gailly, 2008; Rae, 2012). Also, EEPs have traditionally focussed on the development of entrepreneurial skills within the framework of a business plan (Hills, 1988; Honig, 2004). These skills relate to selling, marketing, developing a customer base, developing a product and areas of business law such as intellectual property and confidentiality (Vesper and McMullen, 1988; Bygrave, 1993; Rae, 1997; Kuratko, 2004 and 2005). Among these skills, many EEP’s traditionally would look to teach entrepreneurs about entrepreneurial finance, the need to get financing for ventures and how to manage money entrepreneurially (Cohen and Levinthal, 1990; Vesper and McMullen, 1988; Shepherd and Zacharakis, 2001)

There have been many limitations discussed in relation to traditional methods namely in relation to the traditional approaches inability to reflect, enable and prepare the entrepreneur for the speed of change, dynamism, non-sequential nature, unpredictability, complexity and level of technological influence within the entrepreneurial landscape (Neck and Greene, 2011). Traditional methods have not been satisfactory in preparing or providing the entrepreneur with the required kit of skills, behaviours, attitudes and tools to survive in this environment (Fritscher and Pigneur, 2010). Neck and Greene (2011) claim that traditional approaches to entrepreneurship education are based on a world of yesterday, a world where precedent was the foundation for future action and where history often did predict the future. Although the core of entrepreneurship is the identification and exploitation of opportunities (Shane and Venkataraman, 2000), yet the majority of EEP’s assume the opportunity has already been identified.

‘Know-What’ and ‘Know-How’: Contemporary Perspectives

In response to this, contemporary methods have been developed that supposedly allow the entrepreneur to be more dynamic in the development of a venture, with the methods enabling increased pivoting and adaptation in the creation phase to make the most of opportunities as they arise and to respond to barriers as they eventuate (Eisenmann et al, 2012). Contemporary methods have also been developed in order to encompass a greater use of technology and

experiential processes to reflect the unpredictable nature of entrepreneurship, equipping and educating the entrepreneur for their industry conditions (Pittaway, 2004).

The majority of this new content has typically been centred around Design thinking, the Business Model Canvas; which is a modified approach to business planning and the Lean Startup method. Table 2, illustrates what has been classed as contemporary content as well as the predominant authors central to the debate on their merit in providing valuable EL for entrepreneurs in EEP's.

Insert Table 2 about here

Design Thinking (DT) in entrepreneurship focuses on the reconstruction and the solution of problems rather than analysis of the problems (Johansson and Woodilla, 2009). DT allows entrepreneurs to exploit opportunities in uncertain and even currently unknowable environments (Neck and Green, 2011). Building on DT and the severe questioning within the field as to the legitimacy and benefit of business planning, Osterwalder (2004 and 2012) developed a more modern approach to business planning in the form of his Business Model Ontology. In essence its development and that of the Business Model Canvas (BMC) is an attempt to address the problem that the business planning process is an attractive and powerful learning process, but that a disproportionate amount of time is spent honing secondary research skills rather than actually taking smart action in the real world. The Lean Startup Approach (LSA) is very closely related to DT the BMC and they are usually deployed in unison. The LSA is a hypothesis-driven approach to evaluating entrepreneurial opportunity. Entrepreneurs translate their vision into falsifiable business model hypotheses, then test the hypotheses using a series of "minimum viable products," each of which represents the smallest set of features/activities needed to rigorously validate a concept (Eisenmann et al., 2012). Validation is therefore also a key component of the LSA, the participants develop a minimal viable product and then validate its worth and the various assumptions regarding it. Based on the validation feedback, entrepreneurs must then decide whether to persevere with their business model; 'pivot' by changing some model elements, or abandon the startup. Figure 1 depicts the relationship between DT the LSA and the BMC.

Insert Figure 1 about here

However, despite the popularity that Design Thinking, the Business Model Canvas and Lean Startup methodology are becoming increasingly prevalent within EEPs (Blank, 2013; Neck and Greene, 2011; Osterwalder, 2004 and 2012; and Eisenmann et al, 2012), there is very little empirical research investigating their actual value and benefit and to see if they provide anything new compared to traditional content. Therefore a gap exists in the research to explore the benefit of these contemporary perspectives of 'know-what' and 'know-how' in enhancing entrepreneurial learning, which is what this research aims to address.

Research Method

This qualitative study was designed to "illuminate the black box" of EEPs by specifically examining in detail the learning content of an EEP that uses contemporary Design Thinking

methods. The study used in-depth semi-structured interviews to explore the experiences of EEP participants. The use of in-depth interviews enables a more nuanced exploration of a complex matter (Rubin, 2012). The opportunity for participants to engage in a discussion with the researcher, and for the researcher to probe responses means that issues can be explored in detail. It also allows for richer understanding of the EEP delivery of content and this method of data collection is supported by other studies in the field which have also used the same collection technique (Sullivan, 2000; Man and Lau, 2005).

Access to learning blogs that the participants were encouraged to complete was also provided. The purpose of these blogs was to allow the participants to discuss and self-reflect upon what they had learnt in the program. This provided an additional source of data that facilitated triangulation. It should be explained that only four participants fulfilled these blogs, therefore triangulation was only possible for the results of these four participants.

The sample involved participants of an EEP run by a South Australian university that involved both students and new entrepreneurs from the surrounding council areas. Theoretical sampling was used as the goal was not to generalise to the wider population but to theory. The sample was designed to achieve a balance between those who had no experience (students) and those that had some experience (new entrepreneurs)

In total, 20 semi-structured interviews of participants were conducted. The interview questions covered the following aspects:

- expectations of the entrepreneurs prior to the program,
- questions relating to what and how they learnt during the program, and
- questions pertaining to the expectations of the participant being met.

Analysis

Interviews were transcribed and checked for accuracy. As much as possible, interviews were written to a pre-determined structure covering a consistent range of issues to allow easier analysis across interviews. Individual transcripts were initially analysed with themes or patterns coded. Thereafter, these were combined across the entire interview data and overarching themes identified. Coding occurred inductively (Saldana 2009) in order to draw out the main themes and patterns.

Discussion of results

Sample

As can be seen in Table 3, of the 20 participants interviewed, 14 had completed the program and 6 were in the final stages of the program. The sample was more male oriented, which is common on most EEPs. However, surprisingly, there was a relatively low number of students in the sample, with their being 15 non-students and 5 students. This is in contrast to the majority of EEP's that are run out of universities and are made up of due to this by university students. However, it is believed that the sample obtained from this EEP is more appropriate and reflective of the real world of entrepreneurship whereby the majority of entrepreneurs are not just going to be students from university but people of all different ages from all different avenues of life. The majority of the entrepreneurs were also new entrepreneurs, this was deliberate as the program chosen was created for nascent or beginner entrepreneurs.

Insert Table 3 about here

As explained earlier, the EEP focussed on predominantly providing contemporary content such as the Business Model Canvas and the Lean Startup approach.

Business Model Canvas

From table 4 below, much of the content that the participants were looking for when entering the program was provided by the BMC. As shown by respondent E15 the BMC provided a structure and outline for the participants in regards to what they needed to do in order to create a business; E15 *“I found that having something like the Business Model Canvas has given me a framework I can apply on a lot of things, I didn’t have the knowledge of how to apply in that specific order or quite so simply.”* For example, it taught the participants the need to develop revenue streams, discern partnerships and conduct a customer validation etc.

Insert Table 4 about here

Participants found that the BMC was actionable and design oriented, it enabled the participants to go out and apply or test the various components of their business and adapt these components based on the feedback received, E18 *“For me to be able to do you know countless canvases it constantly changes depending on who I speak to but it helps me to really understand what my concept so much more, like thoroughly.”* It appears to have made the business plan more adaptable to enable entrepreneurs to make the most of opportunities as they arise; it also appears to give a clearer picture of the necessary components of a venture.

Although the majority of the participants found the provision of the BMC to be beneficial, some of the participants found its highly structured approach to be problematic (table 4). This is made evident by respondent E12 who describes that *“I already had an idea, I had a business plan and a working prototype so I was further along the path and so the program wasn’t entirely geared towards where I was with my project, it was more geared towards somebody at an earlier stage with an idea.”* As shown by the previous quote this made the BMC less applicable to the individuals who began the program further along the entrepreneurial learning process or who had specific, perhaps highly complex areas of particular difficulty, like licensing for example. This may suggest that the BMC was aimed at and was more applicable to entrepreneurs who were looking to start or who were at the very beginning of the business creation process, rather than entrepreneurs who already had a product, business or prototype made and functioning.

Lean Start-Up Approach

Through the Lean Startup Approach (LSA), participants were firstly taught how to develop a minimal viable product and secondly, the need to engage with customers and key stakeholders (developing entrepreneurial self-efficacy).

As shown by Table 5 below, learning the need and how to develop a minimal viable product (MVP) provided the entrepreneurs with the ability to more easily move forward and progress with the development of their business idea. Prior to the program many had struggled with

making their businesses and ideas too big, restricting or crippling their development due to cost, or complexity. This is reflected by participant E8 “...*What I had done before the EEP was build here, add here and expand it, the next thing, its unworkable and unmanageable and more importantly not something that you or I could do tomorrow.*” The LSA and MVP made the idea or venture actionable, the participants could actually move forward with its development as they could test it through showing potential customers and stakeholders, developing it based on this feedback.

Insert Table 5 about here

Participants were looking for the program to teach them how to validate whether or not their idea was a viable business proposition (table 6). This is illustrated by respondent E13: “*It validated that it was a business idea and program that would or could be successful, it validated for me that I could do it*”. Participants also appeared to learn that they needed to and could validate the assumptions they held about their business before actually building the product, as evidenced by respondent E6 “*During the EEP I realised that I can actually test all my assumptions and test exactly what customers want before I actually build the product. That was the biggest thing that I took away from the program.*”

Insert Table 6 about here

Know-Who: The Extra Component

Despite the EEP focussing on delivering contemporary content, what was surprising was that many of the participants had the most positive comments on the ‘people’ aspect of their learning experience, namely their mentors, the experts that were involved in the EEP, and the interactions with potential customers and key stakeholders.

Mentors

The interviewees’ often described working or learning with the mentors as the ‘best’ or ‘most valuable’ means of learning offered by the program (table 7). This value was predominantly derived from the real world experience of the mentors, interviewee’ E9 demonstrates this point by saying “*the mentors, having had been very successful in their own businesses have some ideas about what you can and can’t do and they straighten you out.*” The participants valued being able to ask questions and receive advice based on the prior experience of their mentors.

Insert Table 7 about here

The second theme to emerge was guidance and the ability of their mentor to steer them in the right direction, develop their entrepreneurial self-efficacy and hence cause them to alter their entrepreneurial behaviour. This is shown through the quote by participant E18 “*my mentor has led me to speak to different people which has led to bigger things and people and places and*

events that I would never have known about if it wasn't for her." And by respondent E9 who states *"Where the mentors come in really handy is they say, "look, here is your idea, go see this printer because he will be able to help you with the printing" for instance; or "go see the Harvey world travel guy because he will be interested in what you are doing."*

Experts

Similarly the program introduced the participants to experts that they needed to work with or learn off. The program introduced and provided access to law and design students and experts in fields such as marketing, search engine optimisation and production etc., that the participants did not have access to outside of the program. Many of the participants found this to be one of the most valuable outcomes of the program.

Prior to the program many of the interviewees' did not know where to begin in looking for this kind of expertise, they did not know who to contact or who to look for in these areas, let alone specifically what they needed to have done. This is shown through interviewee' E3 who described that *"There is a lot of basic advice that I got that I didn't know, like starting a website, I didn't know how to do that. There is a lot of things involved that I didn't have or hadn't thought of, I didn't know how or where to start or who to look for. The advice I got on how to do it cheaper and better through getting contacts was all really, really good. I feel like I have contacts and know where to start looking."* The program provided the participants with knowledge as to who they needed to contact and how to contact them. The participants then learnt through these people what they needed to do in order to perform the necessary tasks or skills they required.

Insert Table 8 about here

Although the program brought in some experts, there was still greater demand from the participants for the provision of access to individuals with these particular areas of skill, knowledge and expertise. As shown by respondent E12 *"I would have liked more intensive focus on certain things such as exposure to people who assist with registering a trade mark or how to write a contract.... If there had just been a person there who could have sat down and said this is what you need to do to write a privacy policy for your website."*

Potential Customers and Key Stakeholders

The interviewees' describe the learning received from the customers and key stakeholders as practical knowledge and information specific to their individual business as shown through the quote by respondent E6 which states that; *"Each week I had to talk to customers and so that was the process in which I learnt a lot about what they want and what I can do as a business. To learn more about the business idea it is definitely talking to customers."* Participants received knowledge and information regarding what they could offer their customers, how much their customers would pay for their product or service, what their customers really wanted and needed, where changes needed to be made to their product or service and what did their customer understand and not understand about their business etc. (table 9

Participants refer to their idea or business before the program as "just being in their own head", they made up their own assumptions about what was real and correct, what would work and what wouldn't work. None of these preconceptions were based on customer or supplier feedback and interacting with potential customers and suppliers tested the assumptions the

participants held about their business by providing them with new knowledge, as evidenced by interviewee' E12 in Table 20.

Insert Table 9 about here

Conclusions

A key finding from this study is that while the contemporary 'know-what' and 'know-how' in the form of Design Thinking, the Business Model Canvas and Lean Startup methodology is well received by EEP participants, it was the 'know-who' component that really enhanced their entrepreneurial learning experiences. To that end, this study reinforces earlier research that found enhanced learning coming from the knowledge which comes from seeing and hearing someone who has gone through an entrepreneurial process and experienced failures and successes; and the opportunity to ask questions and receive practical advice (Hegarty, 2006). It also reinforces the importance of the human factor as a key driver in regards to bridging content to the development of ESE and entrepreneurial behaviour (Hoang and Antoncic, 2003). It is through the interactions with the mentors, experts, potential customers and key stakeholders that leads to development of the capacity of participants to problem solve, motivate themselves and develop a higher level of entrepreneurial competency. problem solving, motivation and emotional support for entrepreneurial risk taking and behaviour). The mentors helped develop ESE and change entrepreneurial behaviour by motivating, encouraging and directing the participants, telling them 'go see this person, they may be able to help', 'or go see this person, they will be interested'.

Limitations

Our study has three noticeable limitations. Firstly, it is based on a relatively small sample of EEP participants and does not cover other stakeholders in the EEP (like the program directors, mentors, instructors, and experts). Future research should examine the phenomenon among larger samples of different types of EEP participants and stakeholders

Secondly, the process of learning is an ongoing one which may have different outcomes at different stages of the entrepreneurial journey. The interviews only captured a moment in time, albeit with retrospective bias. To really see how the participants put their 'know-what', 'know-how' and 'know-who' into practice, further ongoing contact will be needed and future research would benefit from longitudinal studies.

Research implications

Overall, the study shows that the processes of 'know-what', 'know-how' and 'know-who' are interrelated - by knowing 'who' participants learnt 'what' and 'how to'. The paper therefore makes the important contribution to entrepreneurial learning theory by providing evidence of that 'know-who' is just as important as 'know-what' and 'know-how' as 'know-who' can actually provide entrepreneurs with the means to access 'know-what' and 'know-how'

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Tables and Figures

Table 1 – Traditional Content

Type	Reference	
Entrepreneurial Self-Efficacy	Bandura (1991)	
	Ajzen (1991)	
	Fayolle (1996 and 2002)	
	Fayolle and Gailly (2008)	
	Rae (2012)	
Entrepreneurial Skills	Vesper and McMullen (1988)	
	<ul style="list-style-type: none"> • Business Planning 	Hills (1988)
	<ul style="list-style-type: none"> ○ Business Law 	Bygrave (1994 and 1997)
	<ul style="list-style-type: none"> ○ Marketing 	Gibb (1997)
	<ul style="list-style-type: none"> ○ Production 	Rae (1997)
	<ul style="list-style-type: none"> ○ Product Design 	Gorman et al (1997)
		Jack and Anderson (1999)
		Fiet (2001a and 2001b)
		Honig and Karlsson (2004)
		Kuratko (2003 and 2005)
	Entrepreneurial Finance	Vesper and McMullen (1988)
Cohen and Levinthal (1990)		
Shepherd and Zacharakis (2001, 2002)		
Kuratko (2005)		
Dimov and Shepherd (2005)		
Rae (2012)		

Table 2 – Contemporary Content

Type	Reference
Design Thinking	Neck et al (2014)
Business Model Canvas	Osterwalder (2004)
Lean Startup approach	Eisenmann et al (2012)
Validation	Rae (2012)

Figure 1 - Relationship of Contemporary Content

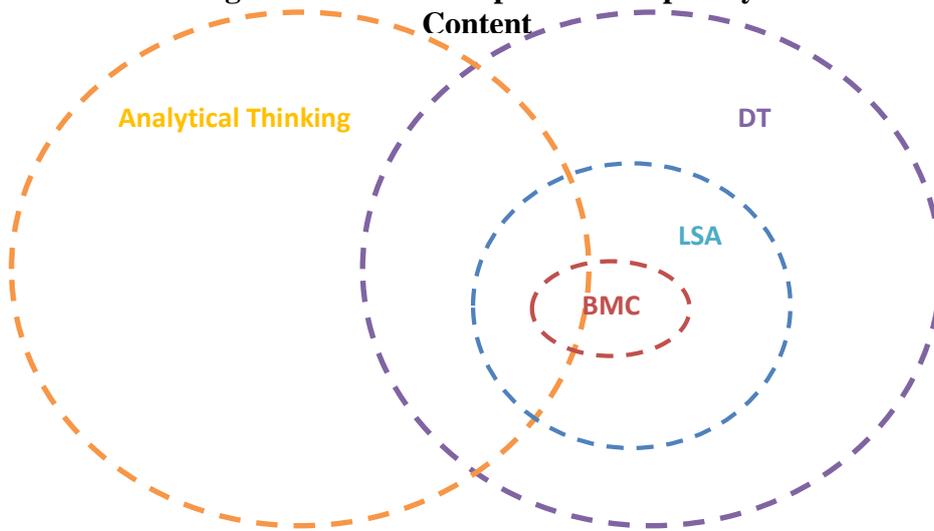


Table 3- Participant Profiles

PARTICIPANT	GENDER	COMPLETED PROGRAM	EXPERIENCE
E1	F	Y	No – Student
E2	M	Y	No – Student
E3	F	Y	No
E4	F	Y	No
E5	M	Y	Yes – Founder of previous businesses
E6	M	Y	Medium – Been involved with start-ups
E7	M	Y	Yes – Been involved starting and managing other start-ups
E8	M	Y	No
E9	M	Y	Medium – Run unrelated business
E10	M	Y	Medium – career experience in industry
E11	M	Y	No – Student
E12	M	Y	No
E13	F	Y	No
E14	M	Y	No
E15	M	N – Current	Yes – Manages business and been involved in starting new ventures
E16	M	N – Current	No
E17	M	N – Current	No
E18	F	N – Current	No
E19	M	N – Current	Yes – Started new ventures before
E20	M	N - Current	No

Table 4 – Business Model Canvas

Interviewee	Interviewees' quotes
E11	<i>“I have a much broader idea of how it’s all going to come together and taking action to pull it about and put it together again.”</i>
E18	<i>“It goes back to that business model canvas, everything within that I am just honing in on and unpacking. You know how to identify the right channels, who the target market is, who they look like, how to personify them, the archetype of that person, linking values to the value proposition and to the customer segment, recognising that there is different customer segments and different revenue models. It’s an invaluable process for me.”</i>
E10	<i>“With the business model canvas and going through it in such a formulaic way, each week they’d focus on a particular aspect and the problem with that is that everyone had actually come in to this in varying levels and some people were individuals some people were groups and I had something already developed. So, different people, different points and each week you’re expected to do their concentrated on a particular aspect and that didn’t match up with everyone.”</i>

Table 5 – Minimal Viable Product

Interviewee	Interviewees' quotes
E4	<i>“Definitely the minimum viable product, so that is getting the base idea up and running as quickly as possible so you can get that real world feedback. A lot of people spend a lot of time and money producing something and then they put it out there and it doesn’t take. So it is important to get that really simple base idea and get the feedback and work on it and go from there.”</i>
E1	<i>“We realised we had to make it smaller and get our minimal viable product out there and selling it to people, and that wasn’t possible with our original idea, it was just way to big and way to complex.”</i>
E5	<i>“The minimal viable product and talking to customers is the core of the lean start-up approach, and then looking at all the different kinds of revenue streams and types of partnerships you can have and the different structures of the company you can have.”</i>

Table 6 - Validation

Interviewee	Interviewees' quotes
E6	<i>“I think the main thing would definitely be a cheaper way to validate the business model. That’s the first thing I got, there’s a lot of different ways you can find out if the model is right. The second is when I’m starting a business it is all based on assumptions and I need to do validate those assumptions, that is what the EEP taught me.”</i>
E8	<i>“Rather than learning from experience the whole process has been accelerated into 12 weeks and I could validate all assumptions about my business model in 12 weeks.”</i>

Table 7 – Mentors and Mentorship

Interviewee	Interviewees' quotes
E3a	<i>“Making networks and contacts and being able to pick the brains of people who have been there and done that, and getting their insights. That was the most valuable part, people who knew about entrepreneurship and who have been there and were able to give me really sound advice.”</i>
E2	<i>“Mentors that were there or mentors and professionals that were there each week they were probably the key learning resources providing professional experience and advice on problems that we were having.”</i>
E3b	<i>“...Getting onto our personal mentors a lot earlier would have been good as it took a while and the selection of the mentors to match personality as well as the project and the expertise of the mentors....”</i>

Table 8 - Experts

Interviewee	Interviewees' quotes
E10a	<i>“The other thing I found valuable and helpful is that they brought specialists in, for example; in Law or SEO and design. Especially for the people who weren't so techy or design focussed.”</i>
E15	<i>“It's always its good having people there I made some new connections in regard to IP so that's been some really good value and input I've got so far.”</i>
E12	<i>“it was useful in introducing me to a couple useful people in the community that could help with legal matters and that sort of thing which is useful.”</i>
E9	<i>“With the TAFE programs you get some of this MVP happening via website development which is really good. But having said that the process still is very piece mill... ....it gets cut off to quickly and you have to hand that process on to another group and it then takes some time for that group to get their head around what they were doing.”</i>
E10b	<i>“....Whereas if this program had a marketing person come in and all those different skill sets and were willing to do that you would actually pump out some teams that would have a bit of sound business knowledge, know how to market, test a product or idea...”</i>

Table 9 – Potential Customers and Stakeholders

Interviewee	Interviewees' quotes
E2	<i>“The way we learnt the most was probably getting out there and talking to people, that was the biggest thing. All the other mediums, the videos, mentors and peers pushed us to doing this.”</i>
E20	<i>“I would say talking to the customer. Yeah. Before being in the program I was in my own head, what it was going to be like and creating, I wasn't basing it on feedback, it was kind of the other way around. You have to start from the customer.</i>
E12	<i>“It forces you on a week to week basis to go well who is your customer? Are they really who you think they are? So just going through the process is helpful. It actually forced you to get out and challenge or test your assumptions about what your customers want or what they need or who they are were challenged by talking about it with the group then talking with customers.”</i>

“Community Based Organizations In Rural Water Supply: From Managerial Mindset To Social Entrepreneurial Mindset”

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“Community Based Organizations In Rural Water Supply: From Managerial Mindset To Social Entrepreneurial Mindset”

Abstract

The extant literature on social entrepreneurship reveals a compelling gap in researching into innovative organizational forms engaged in social entrepreneurship (Santos, 2012), and in case of community organizations, there is a need to study characteristics and outcomes of their activities of organizations (Peredo & Chrisman, 2006). The paper explores the activities of Community Based Organizations (CBO) in Sri Lanka, which are operating at societal level, to examine whether they practice social entrepreneurship rather than just management, and how and why they do so, which contributes to fill this gap.

The research has adopted case study method for empirical component, which is one form of qualitative research methods, and has selected a single representative (typical) CBO. The data collection has been conducted using multiple sources of evidence, and analysis was made relying on theoretical propositions and examining rival explanations (Yin, 2009).

The findings of the research indicate that the CBOs, which are operating at societal level, possess the qualities of social entrepreneurs as outlined in theory, rather than merely managing their facilities. Further, the results reveal that elements of social entrepreneurship assigned for individuals are also applicable to organizations.

1. Introduction

Community Based Organizations (CBOs), operating within a single community are assigned the responsibilities to take actions to uplift their own communities, and to manage common assets for their own benefit (UNESCAP, 2008). Community based solutions with CBOs have been emerging for environmental conservation, provision of community facilities and income generation in many parts of the world (Peredo & Chrisman, 2006, Harvey & Reed 2007). As Dongier et.al (2003, p.5) describe, “Community Based Organizations refer to organizations made up of individuals in a self-defined community who have joined together to further common interests.....The common interest might be related to production, consumption, the use of common pool of resources or the delivery of services..... CBOs can be informal or formal.... CBOs differ from elected local governments in that they are voluntary and choose their own objectives.”

CBOs are extensively engaged in initiation, developing and management of water supply schemes in Sri Lanka. Majority of the CBOs are performing their roles successfully. With the theories on social entrepreneurship, it is argued in this study that CBOs are extensively engaged in social entrepreneurship rather than merely managing the facilities.

Extant literature reveals a compelling gap in researching into innovative organizational forms engaged in social entrepreneurship (Santos, 2012). In case of community organizations, there is a need to study characteristics and outcomes of the activities of organizations (Peredo & Chrisman, 2006). The current research attempts to address this gap, by studying how a CBO practices social entrepreneurship at societal level and why the community has launched the social entrepreneurial venture while government or private enterprises fail.

2. Theory

2.1 Social Entrepreneurship: Concepts & Definitions

The studies on social entrepreneurship area are still in the stage of development. Social entrepreneurship has strong relationship to (commercial) entrepreneurship (Austin et al. 2006,

Smith & Stevens 2010, Alvord et.al, 2004, Dees,2001), to the extent that it is still debated whether it should be a domain within entrepreneurship or should be on its own (Dacin, et al. 2010, Lumpkin et. al. 2011, Bacq & Janssen 2011).The term social entrepreneurship means different things to different people (Dees 2001), as the concept is still poorly defined (Mair & Marti, 2006), with literature fragmented and lacking empirically derived coherent theoretical framework (Weerawardena & Mort, 2006). Social entrepreneurship is a global phenomenon (Dacin et al. 2010) with many innovations in developing countries (Seelos and Mair, 2005) and forming a vibrant phenomenon in developed countries as well (Santos, 2012).

Social entrepreneurship research has to some extent replicated the empirical and theoretical evolution of entrepreneurship, and thus the researches focusing on the personality of entrepreneur, the behavior and process involved, and the social opportunity could be identified (Mair & Marti, 2006). Some authors argue that a new theory is not needed for social entrepreneurship, as the field could be adequately covered by entrepreneurship (Dacin et al. 2010).

Scholars have suggested different definitions of social entrepreneurship (Dees 2001, Dacin et al 2010, Smith & Stevens 2010, Mair& Marti, 2006, Santos 2012), where both terms “entrepreneurship” and “social” having no clear definitions (Seelos & Mair, 2004), making the definition of social entrepreneurship more diverse. Lack of unifying paradigm in the field of social entrepreneurship has led to proliferation of definitions of social entrepreneurship (Dees, 1998), with part of the reason being that there is no clear definition of “entrepreneurship” either (Tan et.al., 2003).

Following illustrate the variety of definitions: Mair & Marti (2006) define social entrepreneurship as “a process consisting in the innovative use and combination of resources to explore and exploit opportunities that aims at catalyzing social change by catering to basic human needs in sustainable manner”. Austin et al (2006) define it as “innovative, social value creating activity that can occur within or across non-profit, business, and/or public/government sectors”. Dees (2001) define the social entrepreneurs as change agents in social sector, who adopt a mission to create social value, relentlessly pursue new opportunities, engage in continuous innovation, not limited by resources in hand and accountable to constituents. Weerawardena & Mort (2006) use the notion of social value creation, opportunity exploitation, social mission, innovativeness, proactiveness and risk management behavior. Bacq & Janssen (2011) define social entrepreneurship as “the process of identifying, evaluating and exploiting opportunities aiming at social value creation by means of commercial, market-based activities and of the use of a wide range of resources.” Boschee & McClurg (2003) argue the importance of including *earned* revenue into the definition of social entrepreneur, as otherwise definition is conceptually flawed and the element of entrepreneurship will not occur, and that traditional nonprofit organizations would also automatically included in the category. This argument is supported by Mair & Marti, (2006) who state that economic value creation in the form of earned income is necessary in order to ensure sustainability and financial self-sufficiency. Santos (2012) defines social entrepreneurship as the pursuit of sustainable solutions to neglected problems with positive externalities.

Mair & Marti (2006) observe that the distinctive domain of social entrepreneurship is that its process creatively combine resources, which often the organization do not possess themselves, to address social problems and thereby alter existing social structures, catalyzing the social transformation by meeting the social needs and focusing on social value, even though economic value creation could be present to ensure financial viability.

Dees (2001, p. 2) emphasizes that “For social entrepreneurs, the social mission is explicit and central.....Mission related impact becomes central criterion, not wealth creation. Wealth is just means to an end for social entrepreneurs”. However, Mair & Marti (2006, p.38) argue that it could include “less altruistic reasons such as personal fulfillment”. Yet, they agree that the main difference between entrepreneurship in the business sector and social entrepreneurship is the relative priority given to social wealth creation versus economic wealth creation. Economic value creation in the form of earned income is necessary to ensure sustainability and financial self-sufficiency, though potential to capture it is limited due to the low paying capacity of “customers” (Mair & Marti, 2006).

Dees (2001, p. 4) admits that his definition is clearly an “idealized”: “The closer a person gets to satisfying all these conditions, the more that person fits the model of a social entrepreneur.” It combines the emphasis indicated by various scholars, i.e. “discipline and accountability with the notions of value creation taken from Say, innovation and change agents from Schumpeter, pursuit of opportunity from Drucker and resourcefulness from Stevenson” Dees further states that social entrepreneurs are “one special breed of leader, and they should be recognized as such. This definition preserves their distinctive status and assures that social entrepreneurship is not treated lightly” (p.5). Seelos & Mair (2006) argue that attempts to define distinctive features of social entrepreneurs tend to portray a “social hero” is counterproductive, as it create a mental barrier for people to become social entrepreneurs. Peredo & McLean (2005) argue that Dees’ definition of social entrepreneur as a person who “relentlessly” pursuing new opportunities and “continuously” engaged in innovation tends to describe a “commendable and successful social entrepreneur” (p. 10). Tan et.al, (2003) comment that any plausible definition of “entrepreneur” must allow for unsuccessful entrepreneurs. Definition of social entrepreneur “must allow that some will have selfish motives behind their social mission, or be less than relentless, or be uneven in their performance, or be otherwise less than exemplary” (Peredo & McLean, 2005, p.11).

Santos (2012, p. 336) argue that social entrepreneurship needs sharper, well-bounded theories “that clarify what is social entrepreneurship, explain its distinctive role in economic system, and inform research and practice, competing with other theories for validation and relevance” Accordingly, he argues that predominant focus on value creation distinguishes the social entrepreneurship from the commercial entrepreneurship which focuses on value capture. Further, he argues that the distinctive domain of action of social entrepreneurship is addressing the neglected problems involving positive externalities, more likely that benefit a powerless segment of the population, to seek sustainable solutions, while adopting a strategy of empowerment than control, in developing the solutions. The definition and theory suggested by Santos (2012) appear to answer the above-mentioned comments on the definition suggested by Dees (2001), and hence it is considered that it is more appropriate to adopt for the present study.

As the working definition of the concept of social entrepreneurship for the current study, the definition forwarded by Santos (2012) is adopted.

2.2 Social Entrepreneurship in Not-for-Profit Organizations

As a diverse range of activities within social entrepreneurship come under different disciplines, researchers have conceptualized social entrepreneurship in a number of contexts, including public sector, community organizations, social action organizations and charities, majority being in non-governmental, not-for-profit organizations (Weerawardena & Mort, 2006). Community typically has been treated in the entrepreneurship literature as exogenous part of the environment for entrepreneurship. However, local community organizations also engage in entrepreneurial activities through collective business ventures, contributing to both local economic and social development successfully. The community acts as an entrepreneur with its members acting as owners, managers and employees collectively identify or create a market opportunity and respond to it. (Peredo & Chrisman, 2006)

Peredo & Chrisman (2006) state that profit making need not be, and typically will not be the primary purpose of the “Community Based Enterprises”(a form of community organization), but achieving some other community purpose, and that the organizations are owned, managed and governed by the people rather than the government or some smaller group of individuals on behalf of the people. Their roots lie in the attempts of the communities to solve some economic or social problem. Their governance structure is designed to be participative. In community organizations, social entrepreneurship plays a role in uplifting living conditions of poor and under privileged and also facilitating community development. (Weerawardena & Mort, 2006)

Weerawardena & Mort (2006), with analysis of nine cases of not-for-profit NGOs, have found that the evidences do not support the assertion by Dees (2001) that social entrepreneurs do not allow lack of resources limit their options. Instead, they have found that they are “highly oriented towards effective risk management in sustaining their organization” (p.31) Weerawardena & Mort (2006) agree with Dees (2001) that the outcomes of social entrepreneurship are social value creation, and propose a constrained optimization model to conceptualize social entrepreneurship, with social entrepreneurship as a function of innovativeness, proactiveness and risk management, constrained by sustainability, social mission and environment. Contrary to Dees (2001), they do not identify opportunity recognition as a distinct dimension, as it is embedded in sustainability dimension. They also agree that the findings confirm the central role of social mission (which agrees with the definition of Dees, 2001) and however, state that the role of relentless effort for sustainability seem to be equally important. These two aspects are interdependent in social enterprise, and are balanced by environmental dynamics. They also argue that the sustainability and social mission are static constraints, while environmental factor is a dynamic constraint.

As Santos (2012) state, there is a compelling gap in researching into innovative organizational forms engaged in social entrepreneurship. CBO is an innovative organizational form, and further, there is a need to study characteristics and outcomes of the activities of community organizations (Peredo & Chrisman, 2006). The current research attempts to address this gap.

3. Research Design

3.1 Research paradigm and methodology

The research question addressed in this paper is “*How and why activities of Community Based Organizations can be regarded as social entrepreneurial activities, not merely management activities?*”

Accordingly, the research involves investigating the attempts by a group of people (the CBO committee managing the services to a larger group of people, within a certain geographical and social context), to engage the CBO as a whole in social entrepreneurial activities. There are

many entities and factors, both external and internal, which are relevant and influencing the decisions, behaviours and opinions of the group of people. Thus, the situation under study in this research is complex, and highly context-bound. It is essential to study and understand the different factors involved within the particular context in a holistic manner, in order to establish the connections to the topic under study and draw conclusions. Hence, constructivism is more suitable as the research paradigm compared to positivism, with phenomenological methodology (Guba & Lincoln, 1994).

The current research has adopted case study method for empirical research, (Hussey & Hussey (1997), which is one form of qualitative research methods (Yin, 2009), and can be used for many purposes, including provision of descriptions, testing theory or generating theory (Eisenhardt, 1989). Case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities - people, groups or organizations (Benbasat et.al., 1987), focuses on understanding dynamics within single settings (Eisenhardt, 1989), with the distinctive need of it arising out of the desire to understand complex social phenomena, can involve single or multiple cases, and several levels of analysis (Yin, 2009). This method allows the investigators to retain the holistic and meaningful characteristics of real-life events, including small group behavior and organizational and managerial processes. (Yin, 2009) In a research study, where the importance of context is high, and when the understanding of the dynamics within a single setting is needed, the case study method is appropriate (Hussey & Hussey, 1997). Thus, the selected method is justified.

3.2 Research Data and Analysis

In the research, the unit of analysis (the “case”) was adopted to be the CBO. A single case research was selected for the study, on the basis that the selected case was representative (typical) of the CBOs. Many types of case study evidence were collected, namely, interviews (both in-depth as well as focused), the documentations, archival records, direct observations and physical artifacts. The principles of using multiple sources of evidence (not just a single source), creating a case study data base and maintaining a chain of evidence were maintained during the collection of data, in order to ensure the construct validity and reliability of the case study evidence. (Yin, 2009). The data collected was categorized using differentiation based on the extant theory and generated inductively (Forman et. al, 2008). Data were sorted into these codes and then summarized. Analysis process involved interpretation of data, applying appropriate codes to segments of text, and recording thoughts and interpretations in an excel table. The codes and memos were generated by the theory applicable to the specific research question and proposition. Similarities and contradictions were identified in the process, (Eisenhardt, 1989). This process is also in conformity with two strategies mentioned by Yin (2009), namely, relying on theoretical propositions; and examining rival explanations. Out of the five analytical techniques described by Yin (2009) this research has adopted the technique of logic models.

4. Empirical Data, Analysis and Discussion

4.1 Data Collection

The data collection was carried out during the period of August 2012 to February 2013 in Sri Lanka. The researcher conducted all the data collection himself, including interviews. Data triangulation was made throughout the data collection in all the matters mentioned, with the same aspect investigated from more than one source, in order to ensure reliability of data collected (Yin, 2009). Interviews were conducted in Sinhalese (the native language of Sri Lanka) and interview notes were taken in English. Voice recordings of all the interviews also were made electronically except in two occasions, with the consent of the interviewees.

4.2 Selected Community Based Organization

Estimated number of CBOs operating and managing water supply schemes in Sri Lanka is between 4,500 and 5,000 at present. The CBO selected for study is a typical one among them. The geographical area covered by this selected CBO is in dry zone of the country and close to a lagoon, and as a result ground water quality is poor. The main social problem in the area for years has been the lack of drinking water. The economy of the people in the area in general is poor, with the majority of the people engaged in farming and other cultivations or going to the nearby coconut cultivations as labourers. A small fraction of people are employed in government, private sector or engaged in other business such as trading. The CBO concerned has commenced activities in the year 2002. The geographical area presently covered by the CBO has originally been planned for four individual CBOs, as the area constitutes four main villages. Due to the difficulty in finding reliable water sources, the four CBOs have been amalgamated to form the present organization.

The construction of the water supply scheme has been funded by a national programme implemented between year 2000 to 2007, assisted by the Asian Development Bank (ADB), through a government organization, National Water Supply and Drainage Board (NWSDB). The financial arrangement for construction has been that the NWSDB to provide approximately 80% of the cost subject to a limit (of Rs 20,000 per beneficiary family) and the community to bear the balance amount. Thus, contribution by a beneficiary family has been approximately Rs 10,000.

The source of the water supply scheme is a battery of bore holes extracting ground water, about 4 km away from the main storage reservoir. The scheme, consisting three overhead service reservoirs and a distribution pipe network of 140 km, has been completed and is in operation since 2008. Initially at the commissioning, the number of households joined as members in the original four CBOs had been approximately 1200, which has presently risen to 1886.

4.3 Analysis of Case Study Evidence and Discussion

The analysis of case study evidence was conducted with close reference to the theoretical definition by Santos (2012), which is based on the focus of value creation by social entrepreneurs, addressing the neglected problems involving positive externalities, which benefit the powerless segments of the society to seek sustainable solutions while adopting a strategy of empowerment. Analysis of evidence and discussion of results are presented below, in relation to above theoretical aspects.

4.3.1 CBOs focus on value creation rather than value capture

As Santos (2012) argues, any organization has a predominant focus either on value creation or value capture. For social entrepreneurs, value creation is predominant. As Dees (2001) state, the social mission is fundamental and making profit, creating wealth, or serving the desires of customers may be part of the model, but these are means to the social end, not the end in itself. Social impact is the gauge of value creation, not the profit or customer satisfaction. Social entrepreneurs look for long term social return of investment and think of sustaining impact and long-term value creation.

Abundant evidence emerged about the predominant focus of CBOs on value creation compared to value capture, and their social mission. CBO's vision states "Setting an example to the country by creation of a healthy society and nature loving environment". The mission statement says "Providing clean water to all the people in the area; Promote practicing good health habits; Implementation and contribution through inculcating positive attitudes on conservation of nature and development of the environment; Supporting institutions and persons who contribute for the wellbeing of the society" In CBO constitution, out of 10 objectives, seven

can be classified as development objectives with social mission as fundamental, related to creating and sustaining social value.

Treasurer of CBO stated “We wanted to provide drinking water to the area which was a biggest problem affecting the development of the community. At whatever level, we wanted to provide improved facilities.” Secretary of CBO revealed some of their future plans “We plan to provide sanitation facilities to more people. We plan to help children of membership in their education.”

It was quite evident that the CBO is not driven by only profit motive. The tariff charged on water consumption has been gradually reduced despite general inflation: “Initial tariff decided in 2007 was higher. After assessment, we reduced it in 2008. Again, we reduced it further in 2009. Earlier, people who consume 3 units [cubic meters] per month had to pay Rs. 150. Now, it is only Rs. 80” the Chairman said. CBO could have maintained high tariff without any challenge by consumers who are willing to pay for the precious commodity and collected a high profit, yet they have decided otherwise.

OIC of CBO revealed how they decided to share the water source: “As all the villages couldn't find good water sources, we decided to provide water to them also from our water source” This was confirmed by the Engineering Assistant of District RWS Unit. “When the scheme was initially designed and completed, it had only 80 km of distribution pipes. Today, it is 140 km. This is decided by CBO to serve people, at the expense of the comforts of existing users”

CBO workers revealed that during the drought, they distribute water by lorry free of charge to areas that do not get water through pipes. Further, Treasurer said “We provide water to religious places at half rate. We provide first 20,000 litres of water to the schools free of charge...On special occasions, religious places are given 20,000 litres free of charge...When there is a funeral, and if they inform us, we provide water to them free of charge during that period. If that happens during a drought period, we provide water by our lorry free of charge...If there is a wedding, we provide water to the house at a reduced cost, even if it is uneconomical to us.” They also described that when payments are delayed by consumers, workers go there before disconnection, and inform them, so that they can still go and make the payment.

The researcher happened to observe an incident at the CBO office: A consumer came with a complaint regarding a high water bill. After recording the complaint, OIC send the workers immediately to investigate it. When the researcher enquired the Treasurer what follow-up action will be taken, he informed that if the water meter is found defective, the meter will be repaired and water bill will be corrected based on previous recorded consumptions. If they find a leakage inside premises (for which the CBO is not responsible), the workers would advise and assist the consumer to correct it. Further, bill will be suitably reduced by about 50%, not to burden the person, with the approval of the Executive Committee.

CBOs realize that too much of commercialization could harm their primary and fundamental social mission, and they avoid entering into such ventures. “One CBO had an idea to buy a passenger bus to earn more revenue.” said the Audit Clerk, District RWS Unit. “However, majority [of CBO membership] didn't like the idea, fearing that if they do so, they will pay more attention to this commercial venture, forgetting more fundamental social service work”

The former Secretary of the CBO said “Water supply is a valuable service to the society...We operate the CBO as a social institution, not only to provide water...Even though I am not an office bearer now, I am dedicated to existence of this CBO and facilities provided.CBO is now providing social services other than water. We provide toilet facilities to those who are in

need, we give plants to grow to improve environment, we provide free water to religious and other community institutions, make donation of funds”

Focus on value creation rather than value capture, which is a defining characteristic of social entrepreneurship (Santos, 2012) is evident in the activities of the CBO as illustrated above. The high priority assigned to social mission also was quite evident, supporting Dees (2001) argument.

4.3.2 CBOs address neglected problems with positive externalities benefitting the powerless segment in the society

Addressing neglected problems with positive externalities usually benefitting the powerless segment in the society is defined as a defining element in social entrepreneurship. The provision of water to rural population, though recognized by the Government as important, has been a neglected problem due to the lack of funds as well as the difficulty in managing the facilities by a central authority. Thus, drinking water has been a severe problem in rural areas especially in dry zone. Chairman of CBO said, “The greatest social problem here was the lack of drinking water. Ground water is brackish and hard, as we are close to the lagoon. People used to buy water delivered by vendors in carts and bowsers.....Now we provide water to several needy communities in the area, who were suffering from lack of water” All the interviewees expressed similar views regarding the problem that existed.

There were requests made from the authorities, with no positive results. The Secretary of CBO affirmed this: “People requested for water many times even in 1980s from government and politicians. Lack of money was the main reason”. The Treasurer of CBO also revealed “In 2002, there was an attempt to obtain water by some recognized leaders, who are committed for social services getting together. There were numerous requests from the politicians and government officials, but there was no positive outcome. Hence, we organized ourselves to do it. No outside support was available. The persons committed to social service, the businessmen got together. There were a few who were active, and who went around to get the support of the others.”

The Government has allocated money together with ADB for the national project, and hence, one may argue that the communities suffering from lack of drinking water are not neglected. However, as the project documents indicate, a selection criterion of communities is the commitment and the demand the particular communities shown. As the Chairman stated “When the ADB project came to the area, I was the Chairman of the Pradesiya Sabha [Local Authority]. When they came here, I promised to do everything possible to implement the project here. We formed CBOs. We entered into an agreement with NWSDB to construct a water supply scheme. We signed an MOU among NWSDB, PS and CBO.”

The people benefitted by the activities of CBO are mainly poor people in the area, who are farmers or casual labourers. Even the affluent few in the area have been powerless with respect to the problem of drinking water, due to the lack of water sources. The Chairman of the PS described “We had only two wells in the village. Those were private wells. In dry season, we used to go there at 3.00 am and wait in the queue till they open the gates around 6 am.”

After constructing the water supply scheme, CBO has launched several programmes for the benefit of the people, addressing neglected problems, and specially targeting the powerless, poor segment. The Chairman, PS said “CBO is providing toilets also to the community. Poorest persons get it free, while others provided with concessionary loans.” The CBO also maintains the public toilet in the town which has been in the poor state, and runs it for the

convenience of the public. CBO pays the salary for the caretaker, and also provides the cleaning material.

The Grama Niladhari (GN), [the village level government officer] related how she got CBO assistance to construct an office to her, which has been a problem for a long time: “CBO gave financial assistance to even construct my GN office. We got Rs 25,000/- on my request”

Conducting similar programmes for the benefit of the membership, especially the poor segment, is a common practice of the similar CBOs in the area. The former Secretary of District CBO Forum [the apex organization formed collectively by CBOs in the district] informed about micro credit programmes conducted by CBOs, at concessionary interest rates. “We have started new credit programmes for income generation as well as community development. Community development is the prime objective. CBO also gets income by way of interest. We charge low interest rate of 24% per year compared to 28%, 30% or 36% [charged by money lenders]. When a loan is given temporarily, some lenders charge 10% per day.”

Audit Clerk of the District Rural Water Supply (RWS) Unit of NWSDB revealed about similar activities in CBOs in the area. “Most of the CBOs carry out credit schemes and other social development work in addition to the basic task of supplying water. They do so mainly with the intention of social upliftment. In a few CBOs, credit schemes are not carried out due to religious reasons [Majority being Muslims], but they carry out other social work... Some CBOs provide large loans to the members (beyond Rs. 50,000) with a security such as a motor cycle or a deed of a land. They write a promissory note in front of a Notary Public or Justice of Peace. They also provide lower amounts (less than Rs. 10,000) as "instant loans" without elaborate procedures”. Credit schemes benefit mostly the poor segment, who do not have the necessary means to approach formal financial sources such as banks, and as such who have to be at the mercy of private money lenders. “Credit schemes are a good service and a relief to people. Traditional money lenders charge 8% per month. The CBOs provide at 3% - 5% per month”. He also revealed an innovative practice by some CBOs. “Some CBOs give agrochemicals to the farmers on credit. This has relieved the farmers the bond between the traditional middleman who used to give agrochemicals to farmer [at the time of planting], and buys the produce on his own terms [at the time of harvesting]. Now, farmers are free to sell their produce to others as they wish”.

Most of the CBOs provide relief to members by way of cash donations in case of a death in a family. In other occasions such as weddings or religious ceremonies, CBOs provide either cash donations or other form of assistance such as free water, free transport facilities, etc.

Activities of CBOs have considerably enhanced positive externalities. Treasurer, CBO said “I can clearly see that due to CBO activities, lifestyle and living condition of people are considerably enhanced.” Similar idea was revealed by the Chairman, PS: “There is a vast general improvement in the areas, where CBOs are working. Health condition of people has improved. With credit programmes, more economic activities are taking place. Because of the water supply, land prices have gone up, since people like to settle in these areas”. Providing another example, Secretary of CBO said: “There is a plan to donate toilets to a few families who are very poor, to serve them and also to avoid environmental pollution. We plan to provide sanitation facilities to more people” Treasurer, CBO Forum highlighted one case in another village served by another CBO: “There was a very poor family with four children. They didn't have water, and children were very dirty. CBO provided a well for them, getting only free labour from the family. Now, they are living a much improved life. This is only one example. There were so many cases like that.”

With the activities of CBOs in the area, there is a significant improvement in the communities, as asserted by the Audit Clerk of the District RWS Unit. “The society as a whole has been changed due to the water supply provided by CBOs. For example, earlier, ladies go and spend long times at the few wells, gossiping and spreading rumours, which did great harm to the community. Now, it is no more. Earlier, people spent much time on collecting water. Now, they use the time more gainfully. Earlier, the toilets provided to the people were not properly used (sometimes, used to store firewood), due to lack of water. Now, they are used properly. People use bathrooms with showers now, and their hygiene is much improved.” The Engineering Assistant of the District RWS Unit related some personal experience, to illustrate the same: “There is a great social development in the area with the provision of water supply. When I was first working in the area, most of the time, I just wipe my hands with a paper after having my lunch, as water was not available to wash hands. Many occasions, I have tolerated my urge to go to a toilet till I return home, since there was no water in the toilets to cleanse myself.”

The above analysis illustrate that CBOs are engaged in activities to solve neglected problems with positive externalities, and the problems they solve have relieved poor and powerless segments in the society, which as per the theoretical views (Santos, 2012) are some defining characteristics of social entrepreneurship.

4.3.3 CBOs attempt to solve problems in sustainable manner

The future plans of the CBO, as indicated in the documents available in CBO office also highlighted the social mission, sustaining the impact and long-term value creation. It stated “Presently, the future aims are: though the future water supply from Kala Oya Scheme [a major water supply scheme planned by NWSDB], satisfy water need of the people; Improve health and sanitation status; Economic development; Environmental protection; Environmental improvement & beautification; Encourage home gardening; Encourage organic fertilizer production and usage; Provide low interest loans to the membership” As an Ex.Co. member stated, “There are requests for small credit schemes through CBO, as a social upliftment. It is being considered by Ex.Co.....Women’s participation in meetings is high. We are planning to start a programme for self-employment for women, to uplift their living condition”

CBO has pioneered new approaches towards more sustainable operations: Chairman said, “We provided facilities to Welfare Society of workers, and gave them a contract to cast cement meter boxes during their leisure time. They can earn some revenue and CBO is also benefitted with good quality product at cheaper price”. Workers revealed another example: Previously, defective water meters were sent to a service centre in the capital city 200km away for repairs at a charge of Rs. 2,000 each. Now, workers do it themselves, saving a considerable amount of money. Recently, they started doing on-the-spot repairs/cleaning water meters to save time.

Sustainable programmes for the benefit of the members are being conducted in many of the CBOs. The credit programmes for income generation as well as community development is a good example. Some CBOs generate more revenue from these programmes than from water supply, according to the Engineering Assistant of the District RWS Unit. He also said that some CBOs have even started running as rural banks, accepting deposits from the members.

CBOs within the district have formed an apex organization called CBO District Forum. Objectives are to share experiences and resources, help each other when needed, and make a common voice at issues affecting the organizations and make greater influence to the government and other authorities in solving them. CBO Forums are initiated under the guidance of the NWSDB. It was found that the NWSDB, which implemented the ADB assisted project, provides guidance to and monitoring of CBO activities. CBOs also welcome this

guidance and expect it to continue, as they feel that it would strengthen the sustainability of their operations.

The above illustrate the attempts of the CBOs to solve the problems in sustainable manner (Santos,2012), using innovative ways (Dees, 2001) which are features of social entrepreneurship.

4.3.4 CBOs adopt a strategy of empowerment

CBO is constituted as an organization representing the beneficiary community. All the beneficiaries are members of the CBO. Office bearers are elected by vote at the annual general meetings conducted. Key office bearers (Chairman, Secretary, Treasurer) take decisions on day-to-day activities and direct the operational staff. Major decisions are taken by the Executive Committee (Ex.Co). “In the Ex.Co, there are 24 members representing consumers from different villages. Then there are four Grama Niladharis [village level government officer] within the area. Chairman, Secretary, Treasurer of the CBO, Chairman of PS, Technical officer of PS & Auditor [engaged by CBO] are also included. This makes total 34.” said the PS Chairman of the area. “Every month, Ex.Co. meets and discusses the performance last month, and plan for next month. Sometimes, the Ex.Co. meeting is like a “battle field”. But, when we come out, there is no animosity. We come to consensus.” The members representing villages are elected at the annual general meeting. All the key office bearers and other Ex.Co. members work on voluntary basis, without a payment of salary.

The organizational arrangement and the constitution of the CBO are based on the basic model introduced by the NWSDB. These are modified and adapted by individual CBOs based on their specific requirements, with collective decisions. “As we gained the experience, we revised the constitution as we require. When we face problems, in seeking solution to them, we revised the constitution.” the former Secretary of the CBO District Forum said. On this basis they have appointed sub-committees for all important matters such as tendering, purchasing, providing water connections, etc. Each subcommittee consists of Ex.Co. members as well as general membership. Any major decision by the Ex.Co. needs to be ratified by the general membership, either at a regular general meetings conducted once in 3 or 4 months, or at a special general meeting.

Empowerment built into the management system has been originated due to the sense of ownership created from the beginning, with money and labour contribution by beneficiary community. “Although there was a faction who didn't participate and who criticized us, majority of the community supported us and participated” the Secretary of CBO said. “General members always regard the CBO as "our own". It is because the majority of the membership has made their maximum efforts, spent money, undergone hardships to create this CBO and the facility”.

Extent of the sense of ownership and empowerment was quite evident. A consumer lady remarked: “When new consumers come and request for service, they come just to reap the benefits of what we constructed with much difficulty. Then we feel sort of angry. When we see or come to know of any water leak or damage to pipe, we inform the CBO office by telephone. We have to conserve the water. It is our own.” She also said emphatically “We always participate in the General Meetings...CBO provide information about income and expenditure. All members are aware of them. There is no chance of malpractices. We will not allow it”

The above evidence and analysis show that the CBO adopts a strategy of empowerment in performing their activities, which is described in the definition of social entrepreneurship by Santos (2012).

5. Conclusions

From the analysis in foregoing sections, it is seen that the CBOs possess the qualities of social entrepreneurs as outlined in theory (Santos 2012), rather than merely managing their facilities. Elements in each aspect of social entrepreneurship are present within the qualities and activities of a CBO at a high degree. Evidences show that the CBOs pursue sustainable solutions to neglected problems with positive externalities. They address the powerless segment in the society, and pay more attention to value creation than value capture. In doing so, they adopt a logic of empowerment in their operations, and make beneficiaries an integral part of the solution. However, contrary to the argument by Santos (2012) that social entrepreneurs try to make themselves dispensable, CBOs were found to have become indispensable to the community, through the provision of an essential commodity. The possession of a social mission is also amply evident from the data analysis, supporting the argument by Dees (2001).

Thus, this study confirms that the activities of CBOs can be regarded as social entrepreneurship activities rather than merely management activities, and that their social entrepreneurial efforts tend to enhance the success and the better performance of CBOs.

CBO is an innovative organizational form, which has not been thoroughly addressed in social entrepreneurial research in the past. Thus, the study covers a gap in the extant academic knowledge.

The results are also important for policy makers and managers in rural water supply field to understand the importance and significance of social entrepreneurial activities by CBOs, which should be duly recognized and encouraged in formulation of future policies and plans, leading to increased coverage of population with water supply and enhancement of the sustainability of rural water supply schemes.

The research was conducted in the context of CBOs engaged in the provision of water supply in Sri Lanka. It would be academically of interest to extend the validity of the findings with future research to the other geographical contexts, and also to community organizations engaged in other types of activities. The findings also direct towards future research opportunities of how social entrepreneurial activities of CBOs contribute towards the sustainability of CBO itself and enhance the legitimacy of CBO in the social context.

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Bricolage and Firm Performance: The moderating role of the environment.

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Bricolage And Firm Performance: The Moderating Role Of The Environment.

Abstract

The behavioral theory of “entrepreneurial bricolage” attempts to understand what entrepreneurs do when faced with challenges and constraints. Most research about bricolage, defined as “making do by applying combinations of the resources at hand to new problems and opportunities” (Baker & Nelson 2005: 333), has been qualitative and inductive (Garud & Karnoe, 2003). Although this has created a small body of rich descriptions and interesting insights, little deductive theory has been developed and the relationship between bricolage and firm performance has not been systematically tested. In particular, prior research has suggested bricolage can have both beneficial and harmful effects. Ciborra’s (1996) study of Olivetti suggested that bricolage helped Olivetti to adapt, but simultaneously constrained firm effectiveness. Baker & Nelson (2005) suggested that bricolage may be harmful at very high levels, but more helpful if used judiciously. Other research suggests that firm environments may play an important role in shaping the outcomes of bricolage (Fisher, 2012). In this paper, we theorize and provide preliminary test of the bricolage-performance relationship and how it is affected by environmental dynamism.

Introduction

Bricolage is an emerging theory that provides one explanation of how early stage entrepreneurial firms emerge and grow despite the constraints and challenges they face (Baker & Nelson, 2005). The relationship between bricolage and performance, however, is far from straightforward. More often than not prior research describes how bricolage generates positive firm outcomes (Ciborra, 1996; Garud & Karnøe, 2003; Salunke et al., 2013). Others however, suggest an alternate scenario; entrepreneurs who use bricolage simply won’t get the job done: their attempts or solutions are imperfect, substandard (Lanzara, 1999) creating poor performance and stagnation (Baker & Nelson, 2005; Hatton, 1989). Prior case research in bricolage has predominantly evaluated environmental munificence (Dess & Beard, 1984), i.e. abundance/scarcity arguments (Cunha et al., 2014), but little is known, about how dynamic environments affect the relationship between bricolage and firm performance. Complex, changing environments (Dess & Beard, 1984) typifies what many early stage firms now experience when they attempt to enter markets, making environmental dynamism critical to study.

The paper is structured as follows. We first develop hypothesis concerning the bricolage-performance relationship and the contingent effect of environmental dynamism. We then test our hypotheses using data from the Comprehensive Australian Study of Entrepreneurial Emergence (CAUSEE) project (Davidsson et al., 2011), including 282 nascent (pre-operational) firms and 247 young firms that are operational but less than four years old. In our tests, we make use of the recently established survey measure of bricolage behavior (Senyard et al., 2014). We conclude by discussing the theoretical implications of our findings.

Bricolage and Firm Performance

Despite the strong interest within entrepreneurship to study nascent venture emergence⁷⁸

⁷⁸ We evaluate venture emergence through three potential outcomes (i.e. becoming operational, firms that persist in their efforts but have not yet reached operational stage, and terminated firms where all firm efforts have been dropped), where becoming operational is preferred over persisting or termination, and persisting is favoured over termination.

(Reynolds, 2007) this has, to the best of our knowledge, never been explicitly theorised or tested in bricolage literature. Limited work also exists evaluating bricolage and firm sales⁷⁹. Most of the prior inductive case research suggests a positive relationship between bricolage and firm performance typically considering outcomes evaluating innovation (Ciborra, 1996; Lévi-Strauss, 1966), dominant industry design (Garud & Karnoe, 2003), or future growth (if used judiciously e.g. Baker & Nelson, 2005). Similarly, we theorise here three important (and interrelated) mechanisms found in new product development literature (NPD) to suggest a positive relationship between bricolage and firm performance: (a) speed of development; (b) co-creation and (c) innovativeness.

Speed of Development

Speed of development i.e. the ability to move quickly from ideas to actual products or solutions (Kessler & Bierly, 2002) is an important process that influences firm performance. Several new product development (NPD) theorists contend that faster development allows firms to establish a competitive edge over competitors (Chen et al., 2005), secure favourable market positions (Smith & Reinertsen, 1991) and as a result, contribute significantly to firm performance. Bricoleurs, through a bias for action, create “momentum” (Garud & Karnøe, 2003, pg 277), through remaining engaged in action (Lanzara, 1999). Such actions rely on the broad skills (Baker & Nelson, 2005) and improvisational flexibility in bricolage actions (Lévi-Strauss, 1966). This enables them to experience fewer delays, increasing the speed of development, and as a result generate positive firm performance (Banerjee & Campbell, 2009).

Co-Creation

Recent literature in NPD and service innovation indicates the importance of customer co-creation activities (Prahalad & Ramaswamy, 2004; Salunke et al., 2013). This research suggests customer collaboration creates several benefits: first, customer involvement including active input into design creates better solutions (Hoyer et al., 2010), increasing customer satisfaction. A second argument suggests collaboration provides access to valuable relevant resources at reduced or no cost (Campbell & Cooper, 1999). This process reduces the cost of development, as firms typically don't pay customers for their contributions. Such collaboration has the potential to contribute significantly to firm performance (Gruner & Homburg, 2000).

Innovativeness

A third argument provided in the literature suggests that bricoleurs are more likely to generate innovative solutions than firms not engaging in bricolage because their bias for action leads them to tinker extensively with existing resources. Bricolage may contribute to the development of firms which are better able to manage the processes of early stage firm development through generating “brilliant unforeseen results” (Lévi-Strauss, 1966, pg 17). These unique solutions, though often imperfect, enable the firm to continue to develop through “good enough” solutions (Gundry et al., 2011, p 4). The three arguments, following prior literature, suggest positive effects of applying bricolage behaviours to firm performance.

Hypothesis 1(a): Bricolage has an overall positive effect on the performance of nascent firms. That is, firms using more bricolage are more likely to become operational than persist in their venture creation efforts.

Hypothesis 1(b): Bricolage has an overall positive effect on the performance of nascent firms. That is, bricoleurs are less likely to terminate than persist in their venture creation efforts.

⁷⁹ for an exception refer Stinchfield et al., 2013

Hypothesis 2: Bricolage has an overall positive effect on young firm sales.

Moderating Effect of Environmental Dynamism

Environmental dynamism refers to the rate of change, absence of pattern and unpredictability of the environment (Dess & Beard, 1984). Firms engaging in bricolage in such contexts may be well placed to address the challenges presented by these uncertain environments. Baker and Nelson (2005) suggest bricoleurs typically possess broad skills which are often applied flexibly in improvisational actions (Baker et al., 2003). The benefits of flexible responses using improvisational bricolage actions may assist in shorter timeframes, increasing the speed of development which is valued in increasingly dynamic environments (Miles et al., 2000), enhancing firm performance (Priem et al., 1995).

Salunke et al. (2013) ascribed the benefits of collaborating with existing customers through acts of bricolage. In contexts of increasing environmental dynamism, customers who are collaborating with early stage firms may be more willing to accept and tolerate the often imperfect solutions generated through bricolage by attributing the barely “good enough” (Gundry et al., 2011, p 4) solution to the environmental uncertainty, strengthening firm performance.

In dynamic environments, markets reconfigure in unexpected ways which provides improved and different types of opportunities for bricoleurs to scavenge idiosyncratic and valuable resources. Increasing resource scope provides different tools and objects to use in recombination activities and the trove⁸⁰, increasing firm innovativeness which in turn may strengthen the relationship between bricolage and firm performance. Increasingly dynamic environments celebrate and seek innovations, with markets willing to try new offerings in comparison to more stable environments. Based on these arguments we therefore hypothesise:

Hypothesis 3(a): Environmental dynamism positively moderates the relationship between bricolage and the performance of nascent firms. That is, the more dynamic the environment, the greater the likelihood that firm using more bricolage are operational, than persist in their venture creation efforts.

Hypothesis 3(b): Environmental dynamism positively moderates the relationship between bricolage and the performance of nascent firms. That is, the more dynamic the environment, there is less likelihood that firm using more bricolage will terminate, than persist in their venture creation efforts.

Hypothesis 4: Young firms that apply bricolage behaviors in more dynamic environments will attain higher firm performance.

Methods

Sample and Data

The main sample

The data for this research was drawn from the CAUSEE project, a 4-year longitudinal study studying firm emergence (Davidsson et al., 2011) administered through telephone surveys over 3 years. This study builds on the general empirical approach, some contents and lessons learned from the Panel Study of Entrepreneurial Dynamics (PSED) studies in the US (Gartner

⁸⁰⁸⁰ A trove is defined as a collection of valuable objects for use in resource activities by entrepreneurs and entrepreneurial teams (Baker & Nelson, 2005; Stinchfield et al., 2013).

et al., 2004; Reynolds & Curtin, 2008). Like the PSED, in order to qualify for inclusion as nascent and young firm in the survey, the respondent first had to answer affirmatively to at least one of the following questions:

1. Are you, alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others?
2. Are you, alone or with others, currently trying to start a new business or a new venture for your employer, an effort that is part of your normal work?
3. Are you, alone or with others currently the owner of a business you help manage, including self-employment or selling any goods or services to others?

The nascent respondents to be eligible also had to confirm that:

- They were (or intended to be) owners or part owners of the nascent firm.
- They had undertaken some tangible “start-up behavior” e.g looking for equipment or a location organizing a start-up team within the last 12 months.

If respondents did not answer affirmatively to the above questions they were deemed under qualified and did not continue to the full survey. Further, if nascent confirmed that revenues had exceeded expenses for six of the past 12 months they were deemed overqualified and screened as a young firm.

Young firm respondents also had to confirm that:

- They were owners or part owners of the young firm.
- They confirmed that they started “trading in the market doing the type of business you are currently doing” in 2004 or later.

As CAUSEE is a longitudinal survey, it enables us to study firm performance over time. We use Wave 2 (W2) and Wave 3 (W3) data for the dependent variables in all hypothesis testing and time-separate the independent variable Wave 1 (W1), bricolage, from the dependent variables i.e. nascent venture emergence and young firm (sales revenue).

Measures

Independent Variable Bricolage. We use the bricolage instrument developed in the CAUSEE study to measure bricolage (Senyard et al., 2014). The questions were designed to tap into the entrepreneurial bricolage definition in Baker and Nelson (2005: 333): “making do by applying combinations of the resources at hand to new problems and opportunities.” The items use a 5-point response scale ranging from 1: *never* to 5: *always*, rather than levels of agreement in order to reflect the behavioural nature of the phenomenon. Reliability testing indicates that the scale has good reliability.⁸¹ The reader is referred to Senyard et al. (2014) for further discussion of the bricolage measure.

Moderator Variables: Environmental Dynamism.

To conduct the regressions, time (2004–2007) commencing from quarter 2 April 2004 was entered as independent variables and quarterly sales as dependent variables for each industry category according to the Australian Bureau of Statistics ANZSIC code. Next, the standard

⁸¹ Cronbach = .821 (Random Digit Dial Nascent Firm, Wave 2); Cronbach = .829 (Random Digit Dial Young Firm Wave 2).

errors of the regression coefficients were divided by the mean sales values of the 3 years. The result was used as the measure of industry-level environmental dynamism in the CAUSEE study, and reflects the extent to which sales were dynamic (i.e., changing) in each industry. This measurement approach has been used in several previous studies (e.g. Baron & Tang, 2011; Boyd, 1995; Hmieleski & Baron, 2009). The environmental dynamism variable range was 0-1 with the mean of .032, indicating moderate-low levels of change in average quarterly sales volumes across industries. The communication industry illustrated the highest level of dynamism, and manufacturing illustrated the lowest level of dynamism.

Controls

We use three categories of control variables. The first category aims to capture the overall level of resources e.g. money invested into the firm via loans (log), employees (presence or absence), teams (or solo), past performance (we control for the number of gestation activities completed in Wave 1, and for the young firms, we control for sales from the year immediately preceding the measurement of firm sales) and number of members in the team.

The second group of control variables aims to capture some of the heterogeneity concerning the ability the firm has to access and develop resources. We include three measures of the human capital of the start-up team: education (number of owners with a university degree); industry experience (number of years); management experience (number of years). The third group of variables account for various characteristics. These include: high-tech; growth intention, service (versus product) and gender of entrepreneur.

Performance: Nascent Firms. Early performance assessment in nascent and young firms is difficult (Davidsson 2008). For the nascent sample, we use a measure of the venture emergence in wave 2 and wave 3. In this study we use the trichotomous stage-of-firm variable generated for the CAUSEE survey (*reaching operational stage, persisting in the firm creation process or terminated*; e.g. Davidsson & Gordon, 2012).

Performance: Young Firms. Given that performance has been measured in various ways in new firms (Cameron & Whetton, 1983), there is little agreement in the literature regarding appropriate performance variables for new firm research (Bamford et al., 2000; Brush & Vanderwerf, 1992). We use wave 2 and wave 3 absolute sales (log) as performance measures as sales are often considered important for the young firm cohort; they enable the firm to gain visibility, which increases market legitimacy (Carter et al., 1996; Schoonhoven et al., 1990) shaping firm performance.

We employ various techniques in this analysis. First, we formally test Hypothesis 1 (a) and (b) and 3 (a) and (b) using moderator binary logistic models to test comparisons of the dependent variables i.e. operational versus persist, persist versus terminate. In assessing the overall appropriateness of the model as well as the individual variables and their significance, we followed the process outlined in Hosmer and Lemeshow (2000). For Hypothesis 2 and 4, we used hierarchical moderated regression analysis. The independent variable and interactions were mean-centred prior to the formation of interaction terms (Aiken & West, 1991). Tables 4.3 and 4.4 provide the means, standard deviations and correlations for both the nascent and the young firm samples of the variables under analysis.

Results

Nascent and Firm Performance

On balance, the nascent firm wave 2 results indicate that increasing levels of bricolage behaviours increases the odds the firm will persist in their efforts, i.e. they remain in the venture creation process versus becoming operational or terminating. Hypothesis 1(a) predicted that bricoleurs would be more likely to become operational versus persisting. In this analysis, becoming operational was coded as the default category. A positive sign on the coefficient would demonstrate support for the hypothesis. We find a statistically weak significant relationship ($\beta = -.050$, $p < 0.05$) but the results indicate a greater likelihood to persist than become operational providing no directional support (Table 1). Hypothesis 1(b) predicted that bricoleurs would be more likely to persist than terminate. We find support for this hypothesis: for every every single-unit increase in the bricolage score, we expect that generally, controlling for the other variables in the model, a 1.066 increase in the log odds of persisting rather than terminating ($\beta = .064$, $p < 0.05$). Table 2 provides the results. Wave 3⁸² test results do not reveal a statistically significant relationship between bricolage and venture emergence in both of the binomial logistic regression tests that were conducted.

Young Firm and Firm Performance

For the young firms, Hypothesis 2 predicted that increasing levels of bricolage would have a positive effect on early stage firm sales. I find no statistically significant relationship between bricolage and sales in wave 2. In wave 3, the results indicate a statistically significant relationship between bricolage and early stage firm performance (sales) in wave 3 sales ($\beta = .018$, $p < 0.05$), providing support for Hypothesis 2. Higher use of bricolage in young firms led to higher sales in wave 3.

Environmental Dynamism Moderation Results

Nascent Firms Wave 2, Wave 3

Hypothesis 3(a) and Hypothesis 3(b) predicted that environmental dynamism would strengthen the relationship between bricolage and firm emergence, and the results indicate a positive yet not statistically significant relationship was found in either wave 2 or wave 3.

Young Firms Wave 2, Wave 3

Hypothesis 4 proposed that for young firms, environmental dynamism would positively moderate the relationship between bricolage and sales. In wave 2 the results indicate that contrary to our theorising, environmental dynamism has a strong *negative* moderation effect on the relationship between bricolage and firm performance, but it is not statistically significant⁸³. In wave 3 the moderation tests reveal a strong *negative* statistically significant moderation effect ($\beta = -.758$, $p < 0.05$), providing no directional support for Hypothesis 4. These results are illustrated in Table 3. Figure 1 graphs the moderation: dynamic environments have a significant negative effect on the relationship between bricolage and young firm sales. Thus the effect of bricolage on venture performance (sales) becomes significantly stronger if firms operate in more stable environments.

⁸² Owing to space restrictions, Wave 3 results are not provided, but are available upon request. Similarly, Wave 2 and Wave 3 test results for operational versus terminated (the third test which was not specifically hypothesised in this paper) are also available upon request.

⁸³ Owing to space restrictions, these results are not provided, but are available upon request.

Discussion

In this paper, we developed testable hypotheses from prior descriptive and inductive research on the behavior theory of entrepreneurial bricolage, and tested them using a large representative sample of emerging firms. The results indicate that contrary to ideas around bricolage enabling faster speed of development, overall bricolage seems to slow nascent firms down. Bricolage increases the log odds of persistence versus becoming operational or termination⁸⁴. As hypothesized, bricolage appears to lead to higher reported sales for new firms. This result is contradictory to the research of Stinchfield et al (2013)⁸⁵. Contrary to our theorising, environmental dynamism did not have a positive moderating effect on the impact of bricolage in nascent firms⁸⁶. The empirical tests evaluating the moderating effect of a dynamic environment on the bricolage–sales relationship unexpectedly indicate a statistically significant negative relationship in the young firms, using wave 3 data. This finding suggests that the association between environmental dynamism, bricolage, and sales is not as straightforward as previously thought and that other influences may have a greater impact on the relationship between bricolage and sales.

It could well be that dynamic conditions exacerbate inefficient reworkings of resources that create a “perfect storm” for early stage firms using bricolage in that the challenges are far too numerous, making it difficult to complete activities despite intentions or attempts at bricolage. The varying multiple challenges may require resources beyond those on hand, thus stretching the trove of resources to its limits (or potentially beyond its limits) which will create delays in resource combination attempts (Uzzell, 1990). As a result of these multiple and complex challenges, bricoleurs devote more time to scavenging resources or gathering resources via network bricolage (Baker et al., 2003), and incur delays as they wait for resources to become available or through attempts resources integrate new resources into the trove. As the market continues to shift, bricoleurs may find themselves constantly attempting to scavenge and pick up unused objects and tools which have the potential to be irrelevant by the time they are ready to be combined and used. Increasingly dynamic environments may require either a larger trove of resources or a trove with greater scope, which is problematic for early stage firms which are often still in the process of establishing a resource trove.

Another potential mechanism which may explain the negative moderation effect is that firms may attempt to pursue too many opportunities using bricolage. Such behaviours create a lack of focus as bricoleurs chase one opportunity after another in shifting markets. Constant tinkering and experimentation for these opportunities may result in a misallocation of financial and human resources (Ciborra, 2002; March, 1991; March & Simon, 1958) which early stage firms already dealing with tight resource constraints can ill afford. Applying resources through bricolage to pockets of opportunities which quickly change may also create confusion in the firm over resource selection, choice, and combinations (Ireland & Webb, 2007), increasing costs (Gallo & Gardiner, 2007) and potential market confusion.

⁸⁴ Using wave 2 data.

⁸⁵ These results were generated using case research of 2 firms that were much older (i.e. 14+ years).

⁸⁶ These non-significant results may not be surprising, given nascent firms typically are still in the process of completing gestational activities, and may not yet have fully entered the market.

Conclusion

A lack of agreement currently exists in mostly theorising of bricolage and firm performance with some scholars arguing its benefits (Bannerjee & Campbell, 2009; Baker & Nelson, 2005; Garud & Karnøe, 2003) yet others cautioning against its use (e.g. Lanzara, 1999). This work provides several novel contributions to the behavioural theory of bricolage. It provides the first empirical tests of bricolage using two different measures of performance: namely venture emergence in nascent firms, and sales in young firms. Overall, the results follow the more common suggestion that bricolage is a tool of persistence (Powell, 2011) and contrary to prior theorising of Stinchfield et al. (2011), increasing levels of bricolage creates higher sales in a large representative sample of early stage firms. This greatly extends and provides an empirical foundation for the body of much narrower prior inductive studies of entrepreneurial bricolage.

The second novel contribution tests environmental dynamism as a contingency effect shaping the bricolage and firm performance relationship. The surprising result of environmental dynamism negatively moderating the relationship between bricolage and sales may suggest that when firms possess or have access only to limited resources or resources which have limited scope, they should focus on doing “a few things very well” (West & Meyer, 1988, pg 395). Firms engaging in high levels of bricolage may find themselves overwhelmed in attempts to create multiple novel solutions in dynamic environments. These attempts place too great a demand on the resources in the trove, hindering recombination attempts, creating delays and limiting firm performance.

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Table 1 Nascent Firm Binomial Moderation: Environmental Dynamism (n=282) DV: Operational vs. Persist (Wave 2)

	<i>Model 1</i>				<i>Model 2</i>				<i>Model 3</i>				<i>Model 4</i>			
	β	<i>St.Err</i>	<i>Wald</i>	<i>Exp</i> (β)	β	<i>St.Err</i>	<i>Wald</i>	<i>Exp</i> (β)	β	<i>St.Err</i>	<i>Wald</i>	<i>Exp</i> (β)	β	<i>St.Err</i>	<i>Wald</i>	<i>Exp</i> (β)
Gestation	.086***	(.025)	11.415	.917	.087***	(.026)	11.734	.916	.087***	(.026)	11.698	.916	.088***	(.026)	11.75	.916
Financial Invest. (Log)	.049	(.080)	.382	.952	.055	(.080)	.462	.947	.055	(.080)	.476	.946	.054	(.080)	.457	.947
Services/Products	-.670*	(.287)	5.44	1.954	-.665**	(.289)	5.310	1.944	-.660**	(.290)	5.194	1.935	-.667**	(.291)	5.264	1.948
Gender	-.206	(.288)	.510	1.228	-.247	(.291)	.721	1.280	-.251	(.292)	.737	1.285	-.246	(.292)	.708	1.279
Education Level	-.024**	(.010)	6.186	1.024	-.025**	(.010)	6.609	1.025	-.025**	(.010)	6.633	1.025	-.025**	(.010)	6.715	1.026
Business Exp	.022	(.027)	.633	.979	.023	(.027)	.679	.978	.023	(.027)	.689	.978	.023	(.027)	.689	.977
General Manage.Exp	-.017	(.012)	2.169	1.017	-.015	(.012)	1.535	1.015	-.014	(.012)	1.390	1.014	-.014	(.012)	1.413	1.014
High Tech	.499	(.306)	2.655	.607	.469	(.309)	2.306	.625	.477	(.312)	2.334	.621	.473	(.313)	2.288	.623
Innovativeness	-.145*	(.062)	5.526	1.156	-.132*	(.062)	4.500	1.142	-.133*	(.062)	4.504	1.142	-.134*	(.063)	4.587	1.144
Fut. Expectation Rev	-.000	(.000)	.268	1.000	-.000	(.000)	.337	1.000	-.000	(.000)	.343	1.000	-.000	(.000)	.349	1.000
Serial	.620	(.704)	.777	.538	.620	(.711)	.763	.538	.625	(.711)	.773	.535	.620	(.712)	.756	.538
Team	-.580	(.440)	1.740	1.787	-.567	(.442)	1.642	1.763	-.570	(.443)	1.658	1.768	-.574	(.443)	1.682	1.776
Team Size	-.329	(.218)	2.262	1.389	-.333	(.220)	2.276	1.395	-.334	(.221)	2.297	1.397	-.338	(.221)	2.340	1.402
Employee	1.238*	(.565)	4.809	.290	1.244*	(.564)	4.861	.288	1.242*	(.565)	4.838	.289	1.233*	(.565)	4.764	.291
<i>Direct Effect</i>																
Bricolage					-.050*	(.029)	.091	1.051	-.050*	(.030)	2.893	1.051	-.049*	(.030)	2.788	1.051
Dynamism									.624	(3.575)	.030	.536	.220	(3.787)	.003	.803
<i>Moderating Effect</i>																
Bricolage x Dynamism													.277	(.896)	.096	.758
Constant	.292	(1.013)			.222	(1.016)			.209	(1.018)			.229	(1.020)		
Model Chi-Squared [d.f.]	63.664***	[14]			66.588***	[15]			66.619	[16]			66.715	[17]		
Block Chi-Squared [d.f.]					2.924†	[1]			.031	[1]			.096	[1]		
Nagelkerke R ²	.274				.286				.289				.286			
% Correct Predictions	69.5				70.6				70.6				69.9			

†P<0.10 * P<0.05, **P<0.01, ***P<0.001 (two- tailed), with directional hypothesis entries (one tailed).

Table 2 Nascent Firm Binomial Moderation: Environmental Dynamism (n=217) DV: Persist vs. Termination (Wave 2)

	<i>Model 1</i>				<i>Model 2</i>				<i>Model 3</i>				<i>Model 4</i>			
	β	<i>St.Err</i>	<i>Wald</i>	<i>Exp</i> β)	β	<i>St.Err</i>	<i>Wald</i>	<i>Exp</i> (β)	β	<i>St.Err</i>	<i>Wald</i>	<i>Exp</i> (β)	β	<i>St.Err</i>	<i>Wald</i>	<i>Exp</i> (β)
Gestation	.041	(.026)	2.605	1.042	.043 [†]	(.026)	2.802	1.044	.041	(.026)	2.465	1.042	.041	(.026)	2.466	1.042
Financial Invest. (Log)	-.058	(.087)	.446	.943	-.054	(.088)	.382	.947	-.050	(.088)	.317	.952	-.042	(.088)	.223	.959
Services/Products	-.083	(.294)	.080	.920	-.140	(.299)	.219	.869	-.120	(.302)	.159	.887	-.126	(.303)	.173	.882
Gender	.202	(.299)	.454	1.224	.255	(.304)	.705	1.291	.273	(.306)	.796	1.314	.284	(.307)	.855	1.328
Education Level	.016	(.010)	2.651	1.016	.017 [†]	(.010)	2.998	1.018	.017 [†]	(.010)	2.850	1.017	.017	(.010)	2.694	1.017
Business Exp	.001	(.028)	.002	1.001	-.002	(.028)	.004	.998	.000	(.028)	.000	1.000	-.003	(.028)	.011	.997
General Manage.Exp	.017	(.012)	1.819	1.017	.009	(.013)	.510	1.009	.010	(.013)	.541	1.010	.012	(.013)	.865	1.012
High Tech	-.447	(.337)	1.761	.640	-.378	(.341)	1.230	.685	-.355	(.344)	1.063	.701	-.390	(.349)	1.254	.677
Innovativeness	.078	(.067)	1.367	1.081	.065	(.068)	.927	1.067	.067	(.068)	.985	1.070	.066	(.068)	.951	1.068
Fut. Expectation Rev	.000	(.000)	.500	1.000	.000	(.000)	.733	1.000	.000	(.000)	.742	1.000	.000	(.000)	.563	1.000
Serial	.307	(.704)	.190	1.359	.209	(.716)	.085	1.232	.239	(.719)	.111	1.270	.159	(.725)	.048	1.173
Team	.225	(.345)	.425	1.252	.162	(.350)	.214	1.176	.193	(.355)	.294	1.212	.228	(.359)	.404	1.256
Team Size	-.016	(.079)	.044	.984	-.023	(.078)	.087	.977	-.023	(.079)	.088	.977	-.020	(.079)	.064	.980
Employee	.026	(.829)	.001	1.026	-.079	(.839)	.009	.924	-.115	(.846)	.019	.891	-.151	(.853)	.031	.860
<i>Direct Effect</i>																
Bricolage					.064*	(.030)	4.602	1.066	.064*	(.030)	4.649	1.067	.066*	(.031)	4.611	1.068
Dynamism									2.210	(4.184)	.279	9.118	2.484	(4.572)	.295	11.984
<i>Moderating Effect</i>																
Bricolage x Dynamism													1.434	(1.181)	1.475	4.197
Constant	-1.456	(.926)			-1.245	(.941)			-1.313	(.950)			-1.273	(.950)		
Model Chi-Squared [d.f.]	18.937	[14]			23.763 [†]	[15]			24.045 [†]	[16]			26.039 [†]	[17]		
Block Chi-Squared [d.f.]					4.827*	[1]			.289	[1]			1.993	[1]		
Nagelkerke R ²		.111				.138				.140				.151		
% Correct Predictions		58.1				58.5				59.4				60.4		

[†]P<0.10 * P<0.05, **P<0.01, ***P<0.001 (two- tailed), with directional hypothesis entries (one tailed).

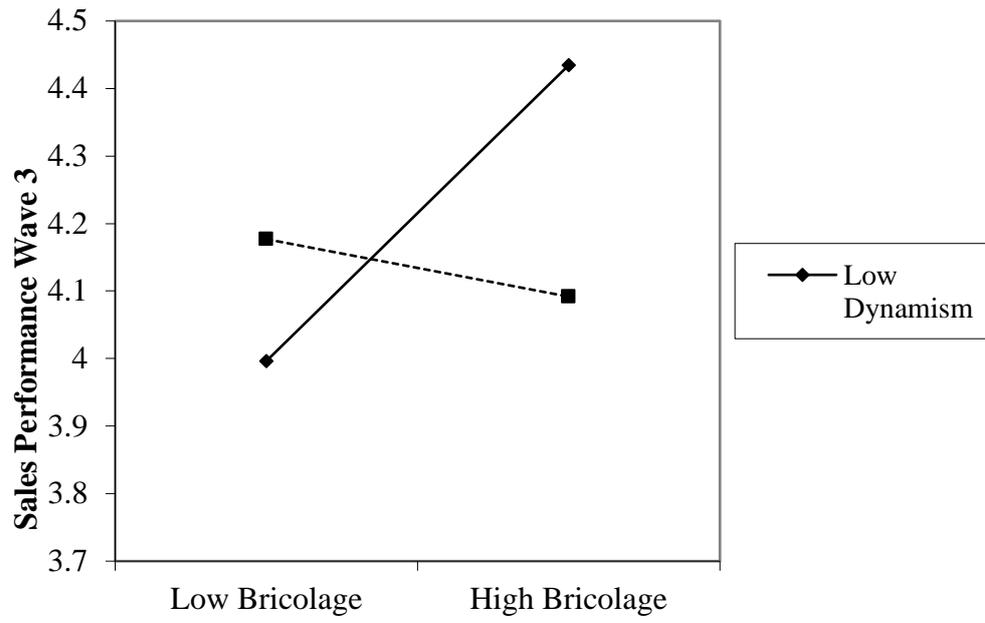
Table 3 Young Firm Dynamism (n=247) (Wave 3)

	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>	
Years Active	-.023	(.046)	-.019	(.047)	-.021	(.047)	-.012	(.047)
Fin Invest. (Log)	.192***	(.023)***	.190	(.023)	.183***	(.023)	.188***	(.023)
Prior Sales (W2)	-.020	(.000)	-.031	(.000)	-.024	(.000)	-.024	(.000)
Services/Product Dummy	.010	(.117)	.024	(.118)	.029	(.120)	.024	(.120)
Education Level	-.031	(.003)	-.058	(.004)	-.057	(.004)	-.061	(.004)
Business Exp	.021	(.010)	.011	(.010)	.008	(.010)	.002	(.010)
Gen. Manage.Exp	.079	(.004)	.074	(.004)	.081	(.004)	.091	(.004)
High Tech	.032	(.117)	.031	(.118)	.034	(.119)	.033	(.119)
Gender	.382	(.105)	.387	(.105)	.383	(.105)	.400	(.105)
Fut. Expectation Rev	-.086*	(.000)	-.086*	(.000)	-.080*	(.000)	-.099*	(.000)
Innovativeness	-.078	(.025)	-.095	(.026)	-.096†	(.026)	-.096†	(.026)
Serial	.061	(.244)	.074	(.245)	.070*	(.245)	.072*	(.245)
Team	-.066	(.187)	-.080	(.187)	-.079	(.187)	-.099	(.188)
Team Size	.189†	(.136)†	.200	(.136)	.193†	(.136)	.199†	(.137)
Employee	.327***	(.110)	.328	(.110)	.338	(.112)	.335	(.112)
<i>Direct Effect</i>								
Bricolage			.100*	(.010)	.103*	(.010)	.094*	(.010)
Dynamism					-.050	(1.637)	-.034	(1.813)
<i>Moderating Effect</i>								
Bricolage x Dynamism							-.113*	(.383)
Change F		9.127***		1.068		.785		1.107
R2 (Adj.)		.331		.338		.337		.347
Change R2				.009		.002		.012

Entries represent standardized regression coefficients. †P<0.10 * P<0.05, **P<0.01, ***P<0.001 (two-tailed),

With directional hypothesis entries (one tailed).

Figure 1 Moderating Effect of Dynamism on Bricolage and Young Firm Sales (Wave 3)



Initiation of the Technology Adoption Process in the Construction Industry: An Exploratory Study

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Initiation of the Technology Adoption Process in the Construction Industry: An Exploratory Study

Abstract

Prior research on the technology adoption process has taken the initiation of the process as a given and has also focussed primarily on only the customer or adopter. In this paper we present an inductive analysis into the initiation of this process in the construction industry. The construction industry presents an interesting research setting because the technology adoption cycles are relatively slow (vs. consumer goods) and the initial phases of the technology adoption process are observable via industry exhibitions at which customers and vendors are readily approachable.

Our analysis of 96 interviews reveals six unique mechanisms that initiate the process: need for a job, specific jobs, step change, make money, develop business, and financial intensive. These initiators are used to improve on a novel Construction Technology Adoption Model (CTAM) that acknowledges the role of the vendor across three stages of adoption. The present study identifies three unique pathways in the CTAM by which a customer may eventually short-list possible solutions prior to adoption.

Key words: construction technology, pre-adoption, influential factors, grounded theory, qualitative analysis.

Introduction

Prior research about innovation and technology adoption provides an abundance of theory and evidence regarding how technology is adopted at the macro level, and how the decision to adopt proceeds at a micro-level. However, very little is known about how the process is initiated. Some of the best known studies about technology adoption remain vague about initiating mechanisms (Langley and Truax 1994) and take awareness of the technology and its perceived value as a given (Karahanna et al. 1999). Even Rogers' quintessential model of stages in the innovation-decision process (1983, 2003) discusses the initial 'knowledge stage' in abstract terms: "The innovation-decision process begins with the knowledge stage, which commences when an individual (or other decision-making unit) is exposed to an innovation's existence and gains an understanding of how it functions" (2003, p. 177). While Rogers notes that "innovations can lead to needs as well as vice versa" (1983, p. 166), his volumes remain vague about how these needs are recognized in the first place. Most of his work focusses on interpersonal communication between consumers and mass media, which work relatively well for consumer products, but have limited applicability to industrial technologies such as those in the construction industry. In response to this gap in the literature, we present our inductive analysis of how customers and vendors in the construction industry interact and identify six different mechanisms that initiate the process which can be mapped onto three pathways to adoption. Our findings provide the empirical foundation upon which we develop an improved Construction Technology Adoption Model (CTAM).

The size of the global construction technology market in 2011 is reported to value \$109 billion dollars and is estimated to reach \$145 billion dollars in 2015 (Statista 2014). Despite this, many reports show that new technologies fail at a stunning rate of 40% to 90%, depending on the technology type (Cooper 1999, Gourville 2005). Between 2012 and 2013, US construction machinery manufacturing suffered a considerable decline of 21 percent in exporting construction technology from \$13.7 billion to \$10.8 billion (AEM 2013). These figures demonstrate that technology and its adoption in the construction industry are a significant phenomenon, as also reflected in the recent studies (Li et al. 2003, Castro-Lacouture et al. 2007, Panuwatwanich and Stewart 2012).

Studies on innovation in the construction industry have predominantly focused on individual behavior of customers to model the technology acceptance process (Peansupap and Walker 2005). However, the initiators and drivers of construction technology adoption are largely unexplored. Developing a more accurate conceptual model of the initiation of technology adoption is imperative if researchers intend to explain the successful adoption of innovations.

Likewise, it is important to consider both the vendor *and* the customer when studying the initiation of the adoption process. In particular, in the construction industry, the innovations are quite visible (cf. molecular level innovations in biotechnology innovation) and deliberately put on display by vendors at industry exhibitions. These occasions provide fertile ground for studying the multitude paths by which vendors and customers initiate the technology adoption process, as done here.

This study presents a model that can be used to systematically analyse the initial stages of the adoption process from the perspective of vendors *and* customers. More specifically, our model presents three alternate pathways by which technology adoption is initiated. Our primary contribution resides in the inductive exploration of the mechanisms by which initiation of the adoption process occurs, whether initiated by the customer or vendor. Our model appeals to innovation researchers by providing a more accurate and detailed summary of the initial stages of the adoption process. It also appeals to innovators, entrepreneurs, and vendors who are interested in facilitating the adoption process and developing their business.

The next sections proceed as follows. First, we present our inductive method by which we explore how the adoption process is initiated in the construction industry. Second, we present our analysis of interview data, from which we isolate mechanisms by which the process is initiated by customers and vendors. Third, we draw on the Construction Technology Adoption Model (CTAM) (Sepasgozar and Davis 2014) to aggregate these mechanisms and identify three pathways through the CTAM. Fourth, we discuss the implications of our findings, followed by our conclusions.

Research Methodology

In order to explore technology adoption drivers in construction, we employed semi-structured interviews, because of their flexibility to obtaining deep understanding (Bryman 2012). This research strategy enables description of the adoption process itself, and production of new insight (Corbin and Strauss 2008). By interviewing both customer and vendor, we can integrate their perspectives into a larger picture and recognizing commonalities (Yin 2010). We analysed the data using thematic analysis and open coding techniques, as reflected in grounded theory methods (Glaser and Strauss 1967) and the Gioia method (Gioia et al. 2013).

Sample Construction

We collect first-hand data by attending three technology exhibitions or industry gatherings in Sydney, Adelaide, Melbourne, Brisbane and Perth, and cross-validated by attending similar events in the USA. Interviews were conducted with 96 participants, totalling over 60 hours of voice recordings and 125 pages of transcripts which we then analysed with NVivo (Bazeley and Jackson 2013).

Criterion and sequential (Patton 1990, Abowitz and Toole 2009) methods were used to select experienced interviewees in order to gain the maximum amount of rich data from the interviews. This method was adopted because the interview aim was elicitation of facts rather than individual behaviour (Schultze and Avital 2011). 32 participants from Australia and 64 participants from North America (i.e. the US, and Canada) were recruited to investigate the technology adoption process. Participants from both sides of the process (i.e.

customers and vendors) were chosen in order to cross-validate the findings of each group using data triangulation methods (Denzin 1970, Mathison 1988). A summary of the interviewees' profiles is provided in Table 1.

Item	Description	Vendors	Customers	Total
Region (Interviewees' business base)	Australia	9	26	35
	North America	30	33	63
Size (based on the number of employees)	Small (4-19)	4	20	23
	Medium (20-199)	14	22	39
	Large (>200)	14	24	27
Interviewees' experience (years)	<5	3	0	3
	6-10	8	5	13
	11-30	18	32	50
	>30	8	24	32
Total		39	59	98

Table 3. Interviewee profiles.

Analysis of Initiation Mechanisms

As suggested in Rogers' (2003) description of the 'knowledge stage', our interviews reveals nuances regarding the exploration and definition of the initial 'state' of the customer, prior to adoption. By state, we mean the recognition (by the customer or the vendor) of the value of the innovation and its ability to create value for the customer (i.e., is the customer in a state of needing the innovation to solve a problem). Awareness and knowledge of this state drives the adoption process and can assist in predicting how a customer passes different stages of the process. Recognition of this state (of need or value) is a precondition for anyone to enter into the technology adoption process, and a new stage that we include at the beginning of the CTAM model. Once the customer has recognised this need they can then move on to identify possible solutions. Customers and vendors both stressed the importance of recognising / identifying this need and state before identifying / recommending possible solutions. For example, a vendor selling excavation machinery highlights the importance of identifying the customer's need and intention:

"when you [are] asking somebody for [an] additional \$25,000 for a machine like this [pointed to a new excavator], because it has 'enclosed cab' and 'air conditioner'. You need to understand why that customer wants it, and why you want to sell it..."(cx14)

Vendors also try to understand the customer's broader situation prior to honing in on a specific need or proposing a solution for that need. Instead of being a 'hammer, looking for nails', one sales manager describes the process of exploring all possible needs as follows:

"At the very beginning, if I am smart and a good sales person, I am going to ask you questions - open ended questions. Tell me what is your operation, tell me about your goal and personal goal and what you are [trying to] accomplish here, why you are

accomplished the company? Ok. tell me how can I make your job easier? Tell me how I can make you shine in your corporation. then you come with solutions, but you have to listen it to customer. (cx62)

We commence our analysis by drawing out all passages related to the process of identifying the problem or need before the adoption process begins, resulting in 181 passages. We then code these passages for the customers and vendors, separately to generated 20 recurring but unique themes, each representing a mechanism by which the adoption process may be initiated. This customer- and vendor-specific analysis is then synthesized to identify multiple pathways to adoption.

Initiation of Adoption by Customers

Passages from customer interviews that indicated drivers or initiation of the technology adoption process were each assigned a mechanism. Where possible, keywords from the passage were used to name the mechanism. If a mechanism relevant to the passage did not exist, a new mechanism was added to the list. 11 mechanisms were identified based on interviews with customers. Table 4 lists these mechanisms including illustrative examples.

Initiation mechanism	Illustrative example
Do the job (get the job done)	When my boss says we need to [do] this job, I have to think how we do this job. I have to take all that I see in this [trade] show. [Then I] say [to my boss that] I know we need to buy that piece of equipment. (cx16)
Useability	Sydney districts are very narrow and you need a small pump, you can fit it straight to set up. So for big city jobs, you need small pumps, may be a smaller boom pump, it is compactable, easier to set up. (cx23)
Deadline	... we have a deadline to be there. (cx20)
Specific job, Identify problem	You identify specifically the problem to solve... You gone get all of waste materials, out of there down the ground into site... It is a handle, hand a clamp that goes on the front of a fork lift. You can go in and get up.. They call them rotator bin lifter (BL). We have the bins outside; you don't have many people... All the waste materials (such as Concrete roble, formwork, steel) are big heavy materials, they are not rubbish... (cn47)
Specific job (limited solutions)	On this job here we fairly restricted by a pile, and really there is no way ... We need auger continue fly [continuous flight auger]. We do not have other option; we had to use that type of machine. (cn39)
Customised technology for specific need	... It is customisation, and they are Engineering manufacturing company. Now they make to our needs. [They] know what we want and what we expect. So it is not enough to shelf purchase. (cn35)
Task character	You identify specifically the problem to solve...(cn47)
Step change, improvement	From Tunnel Boring Systems, it [the need] would be looking at step change in the current way that we do the work underground mining.

Make money, create a business	Cat is more expensive than others. If you have that technology and you have better product, you are going to make more money.
Develop business	If this is 350 ton crane, and you could utilise a 60 ton crane more throughout the day, throughout the week, throughout the year. I mean why would you buy this? You are going to take a financial position, you are going to take what you want to do, and you are going to pay back. (cx56)
Attractive price	Sometimes you force to make decision that times, because of like the price is become attractive, and it would depends on the financial position Your company might be in a good financial position were you don't need to buy versus to borrow money that has a lot with to do make decision to do. (cx56)

Table 4. **Initiation mechanisms and illustrative customer quotes.**

Initiation of Adoption by Vendors

Interviews with vendors reveal 9 mechanisms by which the innovation adoption process is initiated. These are identical to the mechanisms identified from the customer interviews, and hence cross validate them. These mechanisms are listed in Table 5.

Initiation mechanism	Illustrative example passage
Get the job done	[Customers] need straightforward and simple products ... a basic tool [that has] less interaction with the machine and get work and finish the job, because they are trying to accomplish a job. To worry about the technology is not their primary focus that is getting the whole the job done. (cx12)
Problem to solve	The customer has jobs to do and problems to solve, in our case construction problems, compacting soils, asphalt... the customer needs a solution that is why we provide. (cx14)
Help to identify the problem	...[some of] customers don't even know they have problem on site. (cn3)
New project and new need	They [customer] just buy because of the market demand. This guy here possibly got a friend works within a construction company. The construction guy says hey look we have got a job going to happen we are going to bore a tunnel on Sydney, we are going to need a 40 ton crane on that job for about 6 months. Then he goes and buys 40 ton crane. (cn54)
Solving problem and integrity	So we help them to identify the solution, If we try to sell all of our stuff and they end up, we make a lot of money and they do not make anything and they say we never do business with you again. So with integrity we have got solve that problem for them and sometimes pass up on the project and it is not for us it is not for you. You something different. (cx61)
Task character	Sell pump tunnelling project. Big motors.. They do not need screw feeders. They just need small pump. It is easy. I need only a few pages of paper to show customers the technical data of the pump to explain

	them the function of the machine and the price, and I am finish, I will get the order or not. (cn1)
Change	Sometimes, before the technology becomes available, someone going to this process relatively waiting to project to come up. When they win the project, they have done all this before. When they winning bid, they say, I am interested in that sort of stuff, we say actually we just released this new technology, do you want a bit look at that, because it might to do the job and thinking of better, and you do not have to buy these. ...Usually a good sales person wants to do that, because they making change they mind here at tender explore competitors... (cn9)
Create the need	Milwaukee [Vendor X] has five Engineers specialist. They go jobsite only and demonstrate their tool ... They call End User Specialist (EUS) [, and] they create the need for the tool. (cn5)
Make money, following entrepreneurs	... What is the opportunity the market place? Where can I make money? Because we only interested in Money. It is not goodwill, not charity; it is a case of how we make money. (cn54)
Upcoming project	He want buy it. He will buy it when an advanced need coming up. He doesn't have a need. (cx9)

Table 5. **Initiation mechanisms and illustrative vendor quotes.**

Pathways to Adoption

The mechanisms presented in Table 4 and Table 5 were examined for commonality and differences. This was done to identify overarching pathways to adoption, whether initiated by customers or vendors, or in simultaneous interactions between them. The mechanisms above were collapsed into 6 overarching mechanisms, also referred to as basic themes (Attride-Stirling 2001). Table 6 lists each overarching mechanisms, and identifies which customer- or vendor-specific mechanism is associated to it. Customer mechanisms are listed above vendor mechanisms, separated by the dotted line.

General initiation mechanism	Customer- or vendor-specific mechanisms
1. Need for a job (General need)	Do the job, Task character, Deadline, Identify problem
	Get the job done, Problem to solve, Identify problem, New project and new need, Solving problem and integrity
2. Specific jobs	Specific job, Customised technology for specific need, Task character
	Task character
3. Productivity improvement	Step change in productivity
	Change, Create the need
4. Create an equipment hire business (follow others)	Make money
	Make money, following entrepreneurs

5. Develop business	Develop business
	Upcoming project
6. Financial incentive	Attractive price
	(none)

Table 6. Aggregation of customer- and vendor-specific mechanisms.

Our analysis reveals six general mechanisms by which the adoption process is initiated. The most frequent mechanisms is a ‘need driven decision’ centred around identifying and solving a problem without (yet) getting caught up in specific parameters of the problem. Interviewees all pointed out that without the previous recognition of a need the adoption process would not be launched. This observation is in line with the problem solving theory discussed by (Felin and Zenger 2014) , and a direct extension of determining the state of the customer.

Conceptual Model Development

In this section, we review the above pathways to adoption in comparison with the three stages proposed in the CTAM (Sepasgozar and Davis 2014). The stages are somewhat analogous to the Rogers’ (2003) model of the innovation-decision process, with the difference being that the CTAM model focusses on the identification of problems (roughly equivalent to Rogers’ ‘knowledge’ stage) and breaks down Rogers’ ‘persuasion’ process into two stages of increasing specificity in relation to the customer’s problem. In the CTAM, stage 1 involves identifying possible solutions. Stage 2 involves gathering general information about those solutions. Stage 3 involves gathering specific information about particular solutions to fill gaps in the generally provided knowledge.

The state prior to stage 1 refers to identification of problem and indicates different types of problems or needs. Some of interviewee’s discussion shows that the identification of a problem affects the shape of the process a customer pass through to adopt a new technology. The reason is that the first stage of the process (identification of possible solution) should be based on criteria, and expected feature or functionality of the technology affecting by the need. For example, interviewee *cn47* describe how and why they adopted a specific forklift for a large hospital project in Adelaide:

You identify specifically the problem to solve. For example, my last project was a building project, and we need to empty bins, from small bins to bigger bins... If we buy just four cheap rotator bin lifter (BL), four smaller ones that mean you have to four forklifts as well, and they go for operators. ...Building project the cost of waste management is in order ... 1-2%. That is significant, on a billion dollar project; we are talking about a million dollars just to get waste off site. (cn47)

The data also shows that if vendors understand the customer’s job and requirements they would be more successful in selling their product. Construction jobs are often complicated and difficult to understand, particularly for vendors outside the construction industry (i.e. vendors from different disciplines). Customers prefer to deal with vendors who are familiar with the job, and have previous experience in similar projects. For example, the interviewee *cn35* describe how they adopted a technology for their project in Kalgoorlie (Western Australia):

We buy all our attachments from Ballarat in Victoria, because they have taken the time to come to our office look at what we do and see what we need, make changes to

his product to suit our need, then we buy form them. ...So we wouldn't use anyone else. These [pointing to another vender both at the technology exhibition] people in Perth and Kalgoorlie [who are selling close to our place] say we can do the same product, we won't use them because those guys proven up to be a better product for our needs. ... It is customisation, and they are Engineering manufacturing company. Now they make to our needs. We have got a working relationship with him, and he knows what we want and what we expect. So it is not enough to shelf purchase.
(cn35)

Mapping of Pathways onto the CTAM

Most of the cases confirmed the general process described by the CTAM, in that customers and vendors initiate general discussions about their respective problems and solutions, and gradually develop more specific criteria upon which they proceed to an evaluation or adoption of the innovation. This process involves progressing through each of the three stages in the CTAM, as described in (Sepasgozar and Davis 2014). The potential adopter begins the adoption process by identifying potential solutions (Stage 1) and then collecting information about them (Stage 2). From the other side, vendors offer potential solutions to customers, and provide knowledge about the technology and its functionality. In Stage 3, customers compare the features, advantages and benefits of the available technologies, while vendors induce customers by comparing their technology to other technologies available in the market. We refer to this general process as Pathway I.

In our analysis, we note that many customers already know about the technology and so their investigation stages will be different to those in Pathway I who first need to find out general information about the technology. Customers who can 'jump ahead' to stage 2 in the CTAM take Pathway II. Customers in Pathway I and Pathway II have a very similar stage 3, because this is the stage where customers gather detailed information to answer specific questions about the relevance for the particular solution for solving their problem. In a sense the customers following Pathway I 'catch up' to the customers following Pathway II by stage 3.

In relation to the CTAM, we also observe a third group of customers who wish to obtain the technology for the purpose of hiring it to others. They are most likely a family business and their business is technology-oriented. The risk aversion of these businesses leads them to follow others who have already purchased the technology and developed a business. These customers are called followers, because they are not early adopter and only purchase technology that has been proven in the local area. This leads to skipping stages 1 and 2 altogether, which we call Pathway III. For example, an experienced vendor in Melbourne explains:

“Oh, he's got one of them [technologies], he must been making money. I am going to buy one.’ [If you ask them] what is the ownership and operating cost? They are the first thing you need to know, he doesn't know. He has no clue. What does he know is this. The brandbow is renting that crane out let's say \$490 an hour, and they make it money, that what they think. So, we rent it out at this less \$475. He is going to make money as well. That is how it is. So, they want to follow the leader. ...When you are talking about cranes, people says Liebherr is the world's best. I would say Liebherr got 50% global market right now. Very very well, but how they decide to buy it, not because of set down and done a fully balloon spreadsheet, and evaluated one to the other. They have it. What they decided is the bloke down there got one, I am going to have one too. That is the way it is.”

The respective Pathways, mechanisms by which the adoption process is initiated and examples of customers taking that pathway are summarized in Table 7. We also visualize each of the Pathways, CTAM stages and mechanisms in Figure 5.

Pathway	Mechanism	Mechanism description	Example of customer
I	1	Need for a job, get the job done, A new coming up project	All contractors, construction companies
	3	Step change, improvement	Pioneers
II	2	Specific jobs	All contractors, construction companies, particularly innovators
	5	Develop business, create need (Gillespie) increase capacity	Rental companies, Pioneers
	6	Financial intensive	All contractors, construction companies
III	4	Make money, create/develop a business (follow others)	Followers, contractors and rentals

Table 7. Pathways of technology adoption in construction.

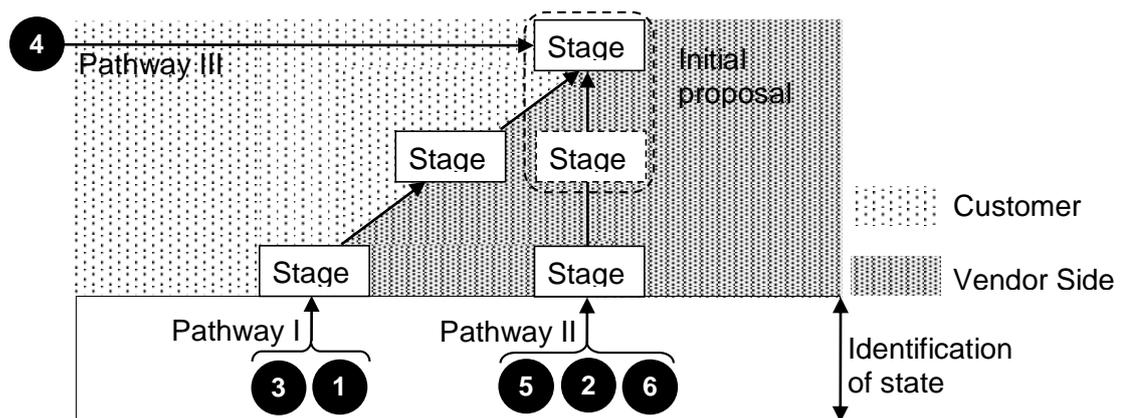


Figure 5. Schematic of the stages of CTAM and entry Pathways.

Discussion

Research Implications

In this study, we found six distinct mechanisms by which the adoption process is initiated. The mechanisms reflect the decision makers' state before they enter the adoption process.

This is ignored in previous studies and they focused on modelling the process itself or influential factors (Peansupap and Walker 2005) rather than identifying the decision makers initial state and the adoption mechanism. Understanding the state is critical, because then we can modify the adoption decision based on relevant customers. The adoption process modifications give us better description / prediction of the adoption process and its origins.

This study modified the CTAM by exploring three Pathways that reflect the process for each group of customers. Previous studies offered a model to predict the technology adoption process without such a consideration. For example, see: [Arayici et al. \(2011\)](#) and ([Slaughter \(1998\)](#)). Therefore, the models are not able to be applied to all customers with different state prior to the adoption process.

Practical Implications

The findings of this study provide critical information to vendors to deeply understand how customers begin the process of deciding which technology to adopt. Using this model, vendors can adapt the presentation and communication of their technological offerings in order to achieve greater market share and faster adoption. In particular, newer vendors can learn from the empirical model because it encapsulates some of the best practices of experienced vendors in the industry.

This pattern is important for entrepreneurs and vendors to know so that they can decide when they should put more effort to introduce their technology, or for which stage they should provide more resources and support for the decision maker. It may imply that vendor's business behaviour during the customer investigation period (i.e. identification of solutions) at stage 1 might be more important than their effort to transfer a lot of knowledge to a customer who does not care about it (as with Pathway II).

Limitations

The data covers only two regions (Australia and North America). Therefore, more investigations are needed to generalize the findings of this research across different countries as well to study the subsequent stages of the process. Similarly, we have limited our research to only one industry, and the process may be different for other industries. This paper only presented three first stages of the adoption process. The rest of the process, including making a decision to purchase a technology, and sequentially use / implement the technology in the project will be future directions of the study.

Conclusion

The purpose of the research discussed in this paper was to develop a deep understanding of how technology adoption is initiated in the construction industry. This study departs from previous adoption studies in several ways: (1) it looks at the antecedents to adoption, (2) it investigates the technology investigation process by considering both parties involved (i.e. vendors and customers), (3) it includes comparative analysis of multiple sets of rich data to increase the robustness and generalizability of the results.

Through our analysis of 98 semi-structured interviews with experts in Australia and the USA we find six distinct initiating mechanisms of the adoption process. Through further analysis of these mechanisms we provide a modified CTAM model that distinguishes three different Pathways that customers employing these 6 mechanisms follow. Additionally, we extended the CTAM model by explicitly addressing a new contextual component called 'identification of need'.

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What Ails Technology Business Incubation in India? A preliminary exploration

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A preliminary exploration

Abstract

Though there has been a rapid growth of technology business incubators across the globe, the questions regarding their performance and sustainability have come up time and again especially in the emerging economies. This paper brings out various factors that constrain the dynamic process of technology business incubation. The bottlenecks that technology business incubators are facing in India are examined in terms of the macro structural considerations as well as micro processes and their interaction at work. Technological systems and National Systems of Innovation have been taken as a point of departure in appreciating the political economy-policy regimes as well as the cultural dynamics of regional and country settings. It is found that, though the rapid changes in the last two decades at the national level have led to the growth of technology business incubators in India, there are certain structural features that are acting as constraints for their effective functioning. This is likely on account of the fact that the process of reforms has not unfolded sufficiently and fully. Further, this study moves on to capture the dynamics at work within technology business incubation settings. Based on this analysis, an attempt has been made to come up with certain policy inputs.

Introduction

Technology business incubation is a dynamic process of business development which nurtures the young firms to develop and make the technological products into marketable goods and services. It has wide ranging benefits for the incubators, incubatees, to the local community and it contributes to local, regional and national competitiveness and ultimately to social and economic development. Business incubation programmes are aimed at promoting economic development of its community by supporting start-up companies and their business development. Business incubation programmes support diversified economies, technology transfer, create jobs, build wealth and commercialize innovation.

Several studies have found that different types of contextual factors in emerging economies act as constraints against the promotion of technology incubation. Fostering technology business incubators within emerging markets requires a deep understanding of the prevalent political, legal, economic and cultural institutions that are vastly different from those present in developed nations. While certain contextual factors such as the presence of business families, and ethnic communities, the reversal of socialistic policies, promotion of information and communications technology and pro-entrepreneurial policies seem to favour entrepreneurship development, there are a large number of other factors that stifle technology-based entrepreneurship. Typically, technology business incubators in the developing countries face unique problems due to the relatively weak infrastructure, inadequate state support, repressed entrepreneurial attitudes, etc. which are related to their history, geography and culture (Rustum Lalkaka, 2011).

The Indian Context

India's National System of Innovation

A closer look at the patterns of technological investment and innovation suggest that there is still geography to the technological innovation and change. This geography is characterized by the institutional and cultural matrix in which state figures in prominently (Pavitt and Patel, 1999). The company's innovative strategies continue to draw from the National System of Innovation comprising of the quality of basic research, workforce skills, systems of corporate

governance, local incentives, patterns of private investment and public procurement. Each one of the above enumerated factors is influenced by the government policies. The state provides infrastructure, incentives and institutions that strongly influence the rate and direction of innovative activities in locally based corporations.

Another critical dimension is the way in which the factors of production and competition are shaped not just by firms intrinsic structure but by its inter firm relations and the context shaped by the competitive cluster (Michael Porter, 1990). The varying forms of the national economics and the state policies that underpin them within the intensely competitive international environment influence the pace of change in the economic activity (Procter, 1990). The comparative advantage is a highly localised process spanning values, cultures, institutions and histories. The affairs of nationhood matter and shape the technological systems. A grasp of the technological developments require an understanding of the social fabric that shapes these developments. The notion of national systems of innovation helps to describe and interpret the performance of specific countries (Nelson, 1993). Taking this as the basis, India's innovation eco system comprising of political economy and policy culture has been presented.

Indigenization and self-sufficiency were the hallmark of the policy and institutional framework during 1960s & 70s in India. In the absence of strong corporate presence and in the wake of post-colonial conditions, the Research and Development system was by and large promoted only in the state sector i.e. the Government Research and Development Institutions. From 1980s there has been a change in the national vision. Concerted efforts on the part of the Government, particularly since 1980s, and host of other factors like Government–Diaspora relationship, private initiatives, emergence of software technology parks, patterns of spatial agglomeration in the Information Technology sector and public private partnerships gave a boost to certain segments of Science and Technology, especially Information technology.

In this phase in India, there were several restrictions on the import of vital components and other technological inputs due to global political economy considerations. In certain strategic and thrust areas like space, nuclear energy, bio-technology, remote sensing and electronics, government agencies have achieved significant breakthroughs on par with the frontier research in the global scientific community. However, the products of these scientific and technological developments have not reached the market and the wider population. The benefits remain in the domain of exclusive applications only. Even though there are scientific and technological developments, this lack of collaboration with the corporate houses and the market is what is missing in Indian context. The changes in the science and technology policies and the innovation policy are a part of larger policy climate change.

Thus, from 1990s, the National System of Innovation in India has been going through a transition from an inward-looking (with main focus on self-reliance) to an outward-looking National System of Innovation (to become globally competitive), driven by economic liberalization policies at home and globalization from outside.

Over the years, in India, the National System of Innovation has developed a higher education system with a strong emphasis on science, engineering and technical disciplines, and also created extensive Science and Technology infrastructure. India has been investing about 3 to 4% of GDP in education and skills.

Given the diversity, vastness and the varied levels of development in different areas in the country, another major feature of Indian National System of Innovation is the regional dimension. The major cities that account for about nearly 90% of this sector's exports are Bengaluru, Chennai, Hyderabad, Delhi, Mumbai and Kolkata. Bengaluru is considered to be the *Silicon Valley of India* because it is the leading Information Technology exporter. In the

wake of economic liberalization there was a scramble among the state governments for investment. Respective governments have provided a host of incentives for establishment of software technology units, mainly Multi-National Companies. States like Karnataka, Andhra Pradesh and Tamil Nadu found the creation of an enabling investment climate as new channels for fast paced growth. Thus, we can observe a clear clustering of the new Information Technology and Information Technology Enabled Service, pharma, bio-tech industries around these centres.

In this background, the Science, Technology and Innovation Policy, 2013 has adopted the changes in the wider policy climate providing the eco system that shaped Technology Business Incubation in India.

Technology Business Incubation Policy and its operation in India

At the central government level, the Department of Science and Technology and Department of Scientific and Industrial Research are the main agencies responsible for promoting science and technology activities as well as fostering inventors/entrepreneurs. From 2000 India started its technology business incubation programme with a clear policy strategy. In addition, the National Innovation Foundation has also been established to enhance institutional support for innovative ventures and activities. A number of 'National Flagship Programs' such as Technology Promotion, Development and Utilization Programme; Technology Development and Innovation Programme Technology Development and Demonstration Programme and Technopreneur Promotion Programme were launched to promote innovation and entrepreneurship. Other policy initiatives include: Science and Technology Policy; National Innovation Act, 2008; and 'Special Innovation Zones.' A wide variety of financial institutions have been set up at the national level to meet diverse financial requirements of the entrepreneurs. These include all India development banks and development financial institutions.

The earliest incubation schemes were launched by the government through the National Science and Technology Entrepreneurship Development Board. It was called the Technology Business Incubation scheme. This program concentrated on growth and sustainability of entrepreneurs and also tried to ensure easy commercialization of their research outputs. In recent years, additional incubation support schemes have been launched. Business Incubation and Technology Incubation and Development of Entrepreneurs schemes have played a crucial role in technology business incubation growth in India. The total investment outlay for these two schemes was estimated to be more than US\$ 2.5m. National Science and Technology Entrepreneurship Development Board and Technology Incubation and Development of Entrepreneurs programme focuses on supporting technology-based enterprises. In addition, the Ministry of Micro, Small and Medium Enterprises schemes support a wide variety of entrepreneurial entities.

By the end of 2009, there were approximately 120 technology business incubators in India. Out of these, 40 were established in the Software Technology Parks, promoted by the Ministry of Information and Communications Technology. About 30 technology business incubators were promoted by other government departments, banks and financial institutions and private companies. Although there was no comprehensive study about all these 120 technology business incubators, it is estimated about 500 enterprises graduate from them every year and 60% of them are technology based start-ups (NSTEDB, 2009). In recent years there has been increasing involvement of various government departments in setting up technology business incubators. Various State Governments are also making strong efforts towards setting up infrastructure and allocating funds to develop entrepreneurship.

Recently, several private organizations have started setting up incubation centres that are funded by private capital. Private incubation facilities prefer to close the deals with entrepreneurs in much less time in order to make themselves the preferred choice for entrepreneurs. Incubation centres have emerged as an important source of finance and support for new and nascent companies.

Research Problem and Objectives

Though the Technology Business Incubators have grown in numbers, the uneven performance and poor sustainability in many situations have become serious concerns of the governments and sponsoring organizations. This research is an attempt to understand the limitations and the problems that technology business incubation is facing in India. This understanding will help not only to address the bottlenecks in India but helps to delineate the pattern of problems that technology business incubation faces in several emerging markets, so that effective policy solutions can emerge.

This paper is presented from the on-going doctoral research on Technology Business Incubation in India. A discussion is undertaken on to the nature of technology business incubation studies and the need to address the gaps which have not been brought out. In this research, National Systems of Innovation has been adopted as a point of departure bringing out the macro and structural feature of innovation system in India. In this process, the evolution of National Systems of Innovation in India as well as the chief characteristics of the policy regime has been mapped. From this flows the technology business incubation policy as it has unfolded in the last two decades has been presented.

Objectives of the study are to:

1. Understand the social context of innovations in different institutional spheres - university, industry, civil society by deciphering the practices, procedures, and processes.
2. Bring out the serious lacunae in the policy framework that flows from the socio-economic context.
3. Identify the challenges in the process of technology business incubation and utilization.
4. Suggest institutional imperatives and policy considerations that are critical for the success of technology business incubators in India.

Review of Technology Business Incubation Studies

Majority of technology business incubation studies till date have focused on investment and infrastructure as an input and patents and marketable products produced by the incubated firms as an output. Several technology business incubation studies have focused on the microeconomic parameters of land, labour, capital organization being the factors of production. It has been observed that there have not been many studies that link and analyse the processes in the meeting point of the macro perspectives and the micro studies conducted on specific technology business incubators. This is precisely the focal part of this study in the Indian context.

Bergek et al. (2007) addresses this problem on a wider scale through technological systems approach. From a meso perspective, the process of diffusion of a specific new technology is reflected in the formation and evolution of technological innovation systems. Between these two levels, there is a clear interaction: On the one hand, new technological innovation systems are built “bottom-up” by entrepreneurial initiatives that develop new technology and bring it to the market. On the other hand, entrepreneurial actors have little chance of succeeding without the formation of a supporting system. Three key processes at the structural level: entry

of organizations, formation of networks and alignment of institutions. The functions of the technological innovation systems that serve as a point of departure for technology business incubation studies are: knowledge development and diffusion, influence on the direction of search, entrepreneurial experimentation, market formation, resource mobilization, legitimation and development of positive externalities or “free utilities” (Bergek et al., 2007). Both policy makers and entrepreneurs need to identify appropriate system-building activities by strengthening of inducement mechanisms and reducing the power of various blocking mechanisms.

Various approaches that can be delineated out of the literature on technology business incubators are as follows: While the emergence of (Technology) Business Incubators is the result of a felt need on the part of practitioners and policy-makers, researchers have attempted to justify the existence of incubators using various theoretical perspectives such as the structural support theory, cluster theory, networks support theory and the resource based view (Chan & Lau, 2005). Successful incubators have been found to provide ‘organized networking’ opportunities over and above the more basic services provided by the less successful ones. The social capital thus accrued to the incubating firm exposing it to a range of collaborative opportunities to acquire and exploit knowledge (Yli-Renko, Autio & Sapienza, 2001).

‘Knowledge based approach’ considers that one of the most critical challenges faced by new ventures is the strategy by which they can effectively expand their knowledge base. The rationale for supporting business incubation is that the network thus created would enable knowledge-sharing across firms, so that they could leverage such knowledge for better performance. Young firms, faced with the liability of newness, often seek to combine their own firm-specific knowledge with that of their external partners (Spender, 1996).

The ‘Critical success factors approach’ focuses on the critical factors of technology business incubators like growth of local, regional, and national economy and innovation capability building. The ‘Comparative Approach’ studies of technology business incubators show how the nature of ownership of incubators (public or private) influences the efficiency of the incubator system. The studies that compared private and hybrid types of incubators in the US found that the first type did not significantly influence the declared objective of technology transfer. Moreover, a comparison of technology business incubators with corporate incubators suggests that technology business incubators have a lot to learn from corporate incubators about mission orientation, having industry representatives on advisory boards, provision of value-added services and efficient management of resources.

However, the Integrative Analytical Framework suggested by Sarfraz Mian (1997) with the national system of innovation concept is found to be more useful. It studies management policies and practices, services and their impacts, and performance outcomes. Sarfraz Mian, (1996) proposes a performance assessment framework, which is drawn from a combined survey of the existing body of knowledge in the areas of business incubation, the university’s involvement in technology and business development support, and the commonly accepted approaches to organizational assessment that provide the necessary building blocks for the integrative framework. The proposed model is comprised of three performance dimensions: (1) program sustainability and growth (2) tenant firm’s survival and growth and (3) contributions to the sponsors’ mission.

As Hackett and Dilts (2004) note the paucity of and opine that the large number of empirical studies provides fertile ground for grounded theorizing. In general, a theory of incubation must offer insights on the “fit” between incubator offering, tenant needs, the business environment and the national and local culture. Because all these dimensions vary widely across industries,

regions and countries, no “one size fits all” theory of incubators can possibly prevail. Hence they identify the required research on the themes of configuration of incubator-incubatee, focused on the incubatees, the innovations they seek to diffuse and the incubation outcomes and the incubation process itself.

The multi-level perspective on technology systems that has attracted quite some interest over the past years helps to integrate meta, macro and micro aspects. However, It serves very well to understand sustainable business incubation and social business incubation and their transformative and developmental potential (Weber, K. Matthias et al, 2012).

Tiago Ratinho et al (2009) present a mismatch between the support currently provided by business incubator and the needs of tenants: while business incubators are helping tenants in developing their human capital, their most immediate needs are strategic. Their analysis challenges the often accepted view that incubators provide their tenants with a comprehensive, unique and constant package of services.

There has been much recent interest in identifying ‘best practices’ that could then be used elsewhere (Rustam Lalkaka, 2011). But these practices are location, culture and time-specific and can only be adapted to the conditions prevailing in local situations. Success in venture creation and employment generation depends essentially on five inter-linked rings: public policy, private partnerships, knowledge affiliations, professional networking and community involvement.

The shift of university industry linkages from a linear to interactive model contributes enormously to the effective functioning of incubators. The transformation of university industry linkages supported by the regulatory environment and government funding programmes lead to formation of a triple helix of university, industry and government networks (Henry Etzkowitz, 2002).

Philip H. Phan, Donald S. Siegel and Mike Wright (2005) in their review of literature on science parks and incubators have come up with four levels of analysis: the science parks and incubators themselves, the enterprises located upon science parks and incubators, the entrepreneurs and teams of entrepreneurs involved in these enterprises and at the systemic level. They call for understanding business incubation as a dynamic process and stress the need to identify the individual mentorship at work between the incubator and entrepreneurial team not only as a formal process but as an informal, emergent and non-rational process. However, during the course of this case study even though collegiality and informal relations at work and give and take in terms of ideas, feedback and evaluation is observed amongst some of the incubatees, it is sparse in terms of interaction between incubator and entrepreneurial team.

Based on the review of literature, analysis of the policy and the exploratory work conducted so far, the following themes have emerged as guiding ideas for this study. Firstly, the problems pertain to the macro dimension which is in the domain of structural and process oriented constraints. Here, the policy oriented issues as well as the large picture comprising of national system of innovation, coordination and implementation issues which have bearing on the programme sustainability and growth have been brought out (Mian, 1997). The three processes at the structural level in terms of entry of organizations, formation of networks and alignment of institutions (Bergek et al, 2007) is examined. Secondly, the whole gamut of issues relating to the missing links between the macro policy and the actual working of technology business incubators has been brought out. Thirdly, the organizational-institutional level constraints observed in technology business incubators have been presented in the context of incubator,

incubatee relationships. The focus is on tenant firm survival and growth focusing on the incubatee innovations and the roadblocks that figure in the innovations they seek to diffuse (Dilts, 2004). Here, the question of match between the incubator services and tenant needs is brought out (Ratinho Tiago et al, 2009). The presence or otherwise of interactive model of university, industry, government network is examined. An exploration of these significant concerns has helped the researcher to tentatively come up with certain policy outlines that could be taken up.

Methodology

A review of the literature reveals that the earlier studies on business incubation are mainly either exploratory attempts or are descriptive. Questionnaire based research and case studies have dominated the research into incubation. While the quantitative studies have compared incubators on various parameters, the qualitative studies have tried to identify best practices and capture intangibles which are not easily quantifiable.

The study based on exploratory research design aims to understand the actual dynamics of technology business incubators in terms of various processes at work and the bottlenecks that are faced. Here, the social shaping and construction of technology approach will be useful. The processes at work through which innovation emerges are discussed in two ways. Firstly, the process in terms of the reference groups will be understood in terms of their inclusion or otherwise and their working. Secondly, using the actor-network approach, the actual networks that operate within the technology business incubators between various individuals and units such as the innovators, host institutions, the scientific community linkages, the financial institutions and the marketing networks will be brought out. Finally, it is felt that studying of business incubators in terms of co-evolution which examines the cooperation between four levels of analysis (incubatee-incubator-network-community) and which examines the collaborative relationship between innovating organization/community with the wider socio-political-economic context (Mark P. Rice, 2002). There have been good numbers of descriptive studies that identify the types of technology business incubators, sector wise characteristics, talent available, their efficiency in terms of inputs and outputs. However, there are hardly any exploratory studies on technology business incubators especially in Indian context which have focused on the processes at work in business incubation. Having said this, it is felt that it is still an important task to identify the patterns, trends in terms of the sectors, host institutions, size and the institutional linkages. To this extent, this study attempts to follow the pattern of descriptive research design.

The study of processes and dynamics requires that specific technology business incubators representing the geographical and sectorial diversity need to be studied in detail. This it is felt that it is possible through a “case study method” (Yin, 1989).

There are four different applications of case study that made it a preferred choice for this study. Firstly and most importantly it helps to *explain* the causal links in real-life interventions that are too complex for the survey or experimental strategies. A second application is to describe the real-life context in which an intervention has occurred. Third, an evaluation can benefit, again in a descriptive mode, from an illustrative case study of the intervention itself. Finally, the case study strategy may be used to *explore* those situations in which the intervention being evaluated has no clear, single set of outcomes.

Three principles of data collection as enunciated by Yin (1989) are used and guide the day to day conduct of this case study. i.e.: using multiple sources of evidence, creating a case study data base, and maintaining a chain of evidence.

Several studies have found that innovation activities strongly differ between central, peripheral and old industrial regions in terms of preconditions for innovation, networking and barriers to innovation (Franz Tödting and Michaela Trippel, 2005). The study is conducted in the technology business incubators located in the newly emerging Information Communication Technology hubs at Hyderabad and Bengaluru. Both the incubators selected are focused on the products and services relating to information technology which helps to ensure sectorial uniformity and map the sectorial characteristic features and growth.

In this doctoral research, it is proposed to conduct a study of four technology business incubators. So far, a detailed case study of two technology business incubators located in the institutes of technology is being conducted with the help of both quantitative as well as qualitative techniques of data collection. In addition, a questionnaire based study through e-mail is also being conducted in 10 business incubators in Information Communication Technology sector. In the process of the case study, several informal interviews are being conducted. However the main thrust is on the “focused interview” which is the source of eliciting substantive, qualitative data that will help to understand the cognitive processes as well as contentious matters and concerns. Focused interview is found to be an effective tool of directed interview. A focused interview with the key informants among the incubatees covering those at various stages of growth including those who have not been very successful has been conducted. An attempt has been made to further go into the business associates, partners and employees of the key incubatee entrepreneur. In addition, focused interview has been conducted with the Chief Executive Officer, critical Senior Management of the incubator and the liaisoning and critical players of the host institutions and the government bodies that regularly interact with the incubatees. Finally, a special attention has been paid to the managers of the existing channel of marketing and finance.

A questionnaire with sub-sections for relevant groups is being used in all these four incubators. A questionnaire customized to incubators, incubatees, financial consultants, marketing consultants and the staff of government agencies interacting with technological business incubators has been administered to all the available members and responses have been collected. And the analysis is underway. Having obtained the information from the wide variety of sources mentioned above “triangulation” of the material collected will be resorted to increase the validity of the data.

Structural and Policy Issues

Based on the review of literature and the study conducted so far with the methodology presented above, the following structural and organisational issues have emerged as critical factors constraining the technology business incubation in India.

In a study on Nascent and New Enterprises which analysed the Incubation support in India, Thillairajan and Ankit Jain (2012) have observed that in many instances, incubation support leads to subsequent investment from other sources of early-stage financing though it is not easy to come by. However it has to be noted that, the linkages between Venture Capital and Private Equity firms on one hand and incubators on the other have not sufficiently developed in India. They point out that the significant trend of universities playing an important role in providing incubation support: 67% of incubators are based in universities. Incubation support has become

so popular that virtually all the well-known technology institutions and many management institutions in India have incubation centres.

Nina Rai (2010) in her study on business incubation for small and medium enterprises in India observes that there is also a lack of proper national coordinated incubation programme. Some of the constraints in the way of promoting incubation facilities may be summarised as follows: To begin with, newbie Small and Medium Enterprises often think they will be requiring more financial services rather than non-financial services. There is dependency on Non-Government Organisations and public sectors to provide such services. The supply of Business Development Services is very critical to micro, small and medium enterprises. Another drawback is that the level of business education is low too. There are no business incubation institutes giving training in India. There is also lack of knowledge about other incubation programmes. Furthermore, there is a paucity of incentives and coordinated strategy in promoting the development of local technology. Banks too are often reluctant to provide loans and support research and technology innovation and modernisation. Private sector by and large also shies away from donning the role of mentor. Even amongst the Small and Medium Enterprises support groups' proper co-ordination is lacking.

Hector Mendoza (2009) in his study on business incubators within the developing world has examined the successful case of business incubation in Brazil and the serious pitfalls of the Nigeria's business incubators. He observes that Brazil has been able to successfully go ahead because of National Enterprise Incubation Support Programme which helped to primarily overcome the bureaucratic and administrative barriers. However, in case of Nigeria, the programme faced two major limitations. Firstly, the business incubators did not operate on commercial basis and rather depended on government for financial support. Further, the incubators were managed like government departments with the attendant red tape and bureaucratic inaptitude. In addition, the serious weaknesses in education and information communication technologies infrastructure has comes in the way of business incubation which he contrasts with the Indian situation where strong network of higher and technical education as well as information communication infrastructure coupled with the English education has helped to create an enabling environment.

Policy Issues

Macro policies are delivered from a national platform whereas the specific technology business incubators operate in local and regional settings. It is found that the alignment of national and regional-state level policies is poor. A careful look at the policy regime in place reveals that strikingly similar policies with parallel bureaucratic structures keep running. Both the incubator and the incubatee firms interviewed have reported that when they start their work in a local context for instance in a municipality, in a city or a town, they have to handle all the permissions and clearances with so many agencies that it takes lot of their active time. The existence of parallel bodies for export promotion, foreign investment promotion, and industrial development and technology missions operating simultaneously within the same sector is creating difficulties. There is no inter-agency communication is a painful fact which technology business incubators have to deal with.

Research and Development route to Innovation: Science Technology Innovation Policy, 2013 like its predecessor considers innovation to be almost exclusively the product of Research and Development. So, it does not contain measures for enhancing the non-Research and Development route to innovation. Experiences of such knowledge-intensive entrepreneur-based firms from places such as Silicon Valley show us that there are other successful ways of promoting innovation.

Innovation: Transformative and demand side issues have not been given due importance. Science Technology Policy, 2013 have failed to realise the fact that stimulating demand for innovation arises from industrial and trade policies that stimulate competition between firms, sometimes by making markets contestable by lowering barriers to entry (Sunil Mani, 2013). Equal emphasis needed on both supply-side interventions and demand-based investments is absent (Abrol, 2013). The current policy has no trace of pursuing a broader socio-technical conception of innovation. Its perspective is still limited to supporting the deployment of high or new technologies. The time has come to put into practice existing proven concepts such as sectorial systems of innovation and cluster innovation systems.

Institutional and Organizational Constraints

Coordination and Collaboration:

However, in the study it observed that within the innovation relevant community of Research and Development labs, research institutions and corporate innovation centres and public sector agencies, there is hardly any communication at both the institutional and informal level. It is a well-established fact that the networks of communications permeate both the effective institutional mechanisms as well as informal networks of professionals.

Lack of coordination is one of the biggest problems that the wider research-innovation environment faces in India (Krishna, 2013). The culture of collaborative research involving different institutes was not promoted. As a result, links between different labs could not be developed. For instance, within a small city of Mysore two large government food research laboratories are there but they remain in relative isolation from each other.

When the incubator managements were interviewed they were specifically asked about the systems in place for collaboration with other research institutions for which they reported either complete absence of collaboration or collaboration only with host institutions but rarely outside.

Incubator Networks: Kris Aerts et al. (2007) on the lines of Michael Porter's argument demonstrate that if one could consider incubator as a cluster specializing in a sector more specifically for start-ups. They show that expanding relations between incubators itself is a fruitful path. However, in case of both the incubators in the present study, there is hardly any inter-incubator relationship even among those incubators which are in the same sector and region.

Screening Practices: Kris Aerts, Paul Matthyssens and Koen Vandenbempt (2007) in their study on screening practices in business incubators have found that most incubators do not screen potential tenants on a balanced set of factors, but concentrate either on the characteristics of the tenant's market or on the characteristics of the tenant's management team. However, they found that the tenant survival rate is positively related to a more balanced screening profile.

In the current study in both the business incubators under study, it is found that the incubators are not screening the potential tenants on the wide and diversified set of criteria which is well documented and explicit. It is found that there is a good amount of ad hocism and non-explicit criteria. In the course of interaction with several potential innovators, the researcher has observed that the large number of technology business incubators prefer innovators with institutional affiliation and a non-attached, non-conformist innovator is not the most welcomed person on the technology business incubator.

Technology Stages, Diversity of needs and Incubation Support: Several studies including a comprehensive study by K. F. Chan & T. Lau (2005) found that the benefits required by technology founders at different stages of development are varied. To meet the needs of technology firms during their stages of development, incubators' services and support should be prioritised in accordance with the development process of the technology firms. In this study, it is found that the incubator managers were aware of differential requirements based on the stages of incubatee growth but in practice they are finding difficult to address the incubatee needs accordingly due to human capital and financial constraints otherwise they could at least get required diverse kind of consultants.

In the present case studies, it has clearly come up that the approach that is adopted is that of "one size fits all" approach. The incubators are not geared up to provide the diversity in the menu of services for community based, service based and web based offerings.

Regulation and hurdles to incubation: The technology business incubators promoted in the state sector as well as university sector is lost in the quagmire of financial and other regulations. In the interaction with technology business incubators and several incubatees it has been revealed that bureaucracy turns out to be the biggest obstacle in India. Based on the field work, it is observed that bureaucracy has not learnt to treat incubatees as the firms to be nurtured. They are expected to meet the whole range of legal obligations from a variety of public departments like service tax, labour department, company affairs, small industries department, etc. This shows that reforms have not percolated to the ground and the concept of technology business incubation has not sunk into the policy relevant and innovation relevant bureaucracy and community. The time taken to open business in India is several times more than the countries like China, US and Brazil. Moreover, the exit provisions are too hard and lead to non-compliance. Unless the mechanisms are developed to accommodate failures, the technology business incubation model is unlikely to succeed as less than 2% of companies ultimately make it.

Funding Innovation: This brings us to the question of funding innovation. Rudy Aernoudt (2004) in his study on the entrepreneurial dimension of incubation argues that one of the biggest barriers for the development of incubators in Europe is the lack of entrepreneurship and the underdevelopment of seed financing and business angel networks. This paper focuses on the dynamic process of incubation and concludes by underlining the importance of close links between incubators and business angels' networks.

All the incubatee entrepreneurs interviewed has without exception suggested that till date banks constitute their first line of funding. They also point out that they have on their own and with the help of the incubator have explored various sources of funding and they reported limited presence and availability of funds through private equity, venture capital and angel networks. This is because of the modern forms of funding are just in the process of development in India. Given the size of the country and the fact that India is a two trillion dollar economy, the current government support is insufficient. Hence there is need for the corporate promotion of technology business incubators. Even though there is growth of private technology business incubators and Angel Investors, a study on the pattern of funding technology business incubators reveals that non-bank investment is less than 30% of the total initial incubatee funding (NSTEDB, 2009).

Technology Transfer Issues: Especially in the emerging countries like India, technology transfer is a very vital ingredient for successful incubation. Many technology business incubators were in fact established with the idea of coming up with new products and services based on customization, reverse engineering and commercialisation of some of the advanced

technologies. Rhonda G. Philips (2002) in his study finds that business incubators have not had high incidents of technology transfer despite the fact that they were established with that goal. In the technology business incubators under study, the incubatees whose business model depended primarily on technology transfer are stuck due to the obstacles such as patenting issues, the prohibitive cost of supportive technical infrastructure, lack of information flows from the scientific groups in the parent organization from which adopted technology, etc. This logically takes us to the question of patenting.

Patenting Problems: Even though the new patenting policy with the latest amendments has been put in place in India, the policy and legal provisions for the rights of individual innovator vis-à-vis the agency and the respective rights in case of public private partnered innovation are still ambiguous. The incubatees have expressed several reservations of patents/supporting US firms, reservations to lend technological support due to their reservation about patenting, royalties, protective and remedial mechanisms in case of violation.

Return migration of technocrats and disincentives: During the course of the study, several entrepreneurs who were return migrants i.e. who have worked mainly in US and a few other countries like UK have been interviewed. Based on those interviews it is understood that to attract the best of the talent into innovation, the culture of freedom experimentation and start-ups is required. In India with traditional preference for stability, continuity and established organizations, the new breed of start-ups, innovation and non-conformity is not easy to come by. However, as mentioned earlier in this paper, when the new age techno-entrepreneurs are coming up in the post-liberalization era, bureaucracy is becoming a big obstacle. All the innovators who have been interviewed so far have expressed this as a major barrier without exception.

Non-market orientation of academic institution promoted incubators: Most of technology business incubators located within the university settings in India are led by academia. In India, their fundamental training has all along been devoid of corporate exposure. This comes in the way of technology business incubation as a unit drawing the resources from the financial institutions, marketing agencies as well as industry.

Several of the issues which have been mapped above are connected to the bottlenecks in the co-evolution of business incubators. Though standalone business incubators have started functioning in the post liberalization era in India, many of the required institutions, networks, processes and the culture of innovation are found to be deficient. The success of business incubators is contingent upon co-evolution within the business incubators as well as institutional structure and culture that is required to make it work smoothly. In view of this, the following policy recommendations have been proposed.

Policy Outlines

Certain policy recommendations that stem from the research conducted so far are:

There is an urgent need for alignment of national, regional and local policies.

Secondly, at a policy level, technology business incubation needs a specific policy statement which is missing in the recent Science Technology Innovation Policy in 2013.

Thirdly, the problems of plethora of agencies overlapping and multiplicity of regulations clearly calls for establishment of a one stop shop for technology business incubation needs i.e. a single window for technology business incubators establishment, promotion and working.

Fourthly, the weakness of the Indian policies lies in their failure to evolve a right mix of different policy strands that positively impact the performance of the national innovation system. Thus, the overall problem relates to the lack of appropriate linkages between different institutions in the national innovation system. Though various policy measures were adopted during the 1990s they did not succeed owing to the half-hearted approach and non-percolation of these initiatives to the ground level. The above discussion also makes the case clear for much needed second generation reforms.

Fifthly, strong venture capital market in India is essential to promote and underwrite risk and promote innovation.

Sixthly, above all we need a new breed of Science and Technology policy professionals, economists, MBAs, social scientists and other policy analysts to be placed in the leadership roles in technology business incubators, Ministry of Science and Technology, Department of Science and Technology, department of bio-technology and other science departments. So far, these agencies have no provision for recruitment of such professionals and to institutionalize interdisciplinary teams.

Finally and most importantly, there is a pressing need to develop an evaluation system that undertakes a periodic review with iterative feedback loops. Mechanisms for this purpose need to be developed.

Conclusion

This paper explores various dimensions of technology business incubators with the help of the literature and the field study conducted in India so far and brought out the macro considerations and micro processes that stifle the growth and effective functioning of technology business incubators in India. The structural aspects of changes in National Systems of Innovation and Business Eco System have in fact led to the rapid growth of technology business incubators in India. However, some of the features of the very system that promoted technology business incubators are also throwing up several constraints as the process of reforms has not fully and sufficiently unfolded. These aspects have been presented along with the critical functional and process oriented bottlenecks. Finally, based on these considerations, policy outlines to address the challenges have been presented.

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Agent-Based Simulation as a Component of Mixed Methods in Entrepreneurship Research

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Agent-Based Simulation as a Component of Mixed Methods in Entrepreneurship Research

Principal Topic

As a new research method supplementing the existing qualitative and quantitative approaches, agent-based modelling and simulation (ABMS) may fit well within the entrepreneurship field because the core concepts and basic premises of entrepreneurship coincide with the characteristics of ABMS (McKelvey, 2004; Yang & Chandra, 2013). Agent-based simulation is a simulation method based on agent-based models. The agent-based models are composed of heterogeneous agents and their behavioural rules. By repeatedly carrying out agent-based simulations on a computer, the simulations reproduce each agent's behaviour, their interactive process, and the emerging macroscopic phenomenon according to the flow of time. Using agent-based simulations, researchers may investigate temporal or dynamic effects of each agent's behaviours.

Despite the fact that ABMS may fit entrepreneurship studies well, it is difficult to find cases where ABMS has been applied to entrepreneurship research. Up to now, there have been no ABMS-applied studies published in the major journals in the entrepreneurship field such as the *Journal of Business Venturing* (JBV) or *Entrepreneurship Theory and Practice* (ETP). To apply ABMS into social sciences, mixed method approaches that engraft qualitative and/or quantitative methods are currently being attempted (Garcia et al., 2007; Jansen & Ostrom, 2006). Through these mixed method approaches, the researcher can build an ABMS, and validate the ABMS.

The purposes of this study are: 1) to propose considerable usages of ABMS as a component of the mixed methods in entrepreneurship field by analysing current mixed methods studies in the field; and 2) to present an example in which the ABMS is applied as a component of mixed methods. This study contributes to the entrepreneurship field by promoting the application of ABMS as a component of the mixed methods approach.

Methodology

To find out the current usages of mixed methods in entrepreneurship studies, we conduct a content analysis for the articles on JBV or ETP from 2001 to 2012. To identify mixed methods studies, all articles on the journals are reviewed and classified into two main categories: non-empirical or empirical; and then the empirical category is divided into three types: quantitative, qualitative, and mixed methods articles. We regard a study as quantitative if the data is numerical; or as qualitative if the information is textual, and we consider an article to be a mixed methods study when it has quantitative and qualitative approaches (Molina-Azorín, 2012). From the mixed methods studies, we identify their methodological components.

Moreover, to suggest considerable usages of ABMS as a component of mixed methods in entrepreneurship research, we perform structured interview using Delphi technique with six entrepreneurship scholars who understand ABMS. We provide them with the methodological components commonly found in the mixed methods studies, and ask about each of the methodological components: "Can this methodological component be used effectively with ABMS?" and "When and how may this methodological component be used effectively with the ABMS?" All the answers for the questions are fed back to the scholars who participating in the interview process and the scholars have the opportunity to agree or disagree with the other scholars' opinions, and modify his/her initial opinion.

Results and Implications

We identified more than 700 articles published on JBV or ETP over 12 years, and 50 articles that applied to mixed methods. The rate of the mixed methods articles is approximately 7%. Among these mixed methods studies, 80% of the studies are composed of qualitative and quantitative (or vice versa) sequentially, and the others are composed of simultaneously. Within sequential compositions, common cases are: [qual □ QUAN] or [QUAL □ QUAN]; the compositions of [QUAN □ qual] or [QUAN □ QUAL] are relatively rare ('QUAL' or 'QUAN' stand for a major method, and 'qual' or 'quan' stand for a minor method in a study). The common methodological components of these mixed methods studies are statistical analysis and case study.

By the results from the structured interviews using Delphi technique, we suggest two usages of ABMS as a component of the mixed methods within the entrepreneurship studies: The one is the qualitative methods such as case study to build a theory, and then ABMS to elaborate the theory. The other is ABMS to explain a phenomenon, and then the quantitative methods such as statistical comparison against empirical data to validate the simulation results.

On the one hand, as a representative qualitative approach, case study has already been widely used to build theories in the entrepreneurship field; thus, case studies can be effectively combined with ABMS to establish agent-based models in this field. On the other hand, the quantitative methods can be effectively used when researchers validate established agent-based models with the results from the simulations. Validation of ABMS can be classified into macroscopic and microscopic validation. The macroscopic validation explores whether the simulated results correspond to the reality as a whole. One of the considerable ways for the macroscopic validation is to compare the simulation results with stylized facts of reality statistically (Gilbert & Terna, 2000; Jansen & Ostrom, 2006; Takadama et al., 2008). The microscopic validation can be done by the investigation of each agent's microscopic behaviour through quantitative methods. In particular, conjoint analysis can be used as a quantitative method to validate each agent's behavioural rules. Case study, statistical comparison, and conjoint analysis are familiar to researchers in the entrepreneurship field. Thus, it is promising to combine these methods with ABMS in the entrepreneurship field.

Social and Commercial Entrepreneurs – Where are the Differences?

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Social And Commercial Entrepreneurs - Where Are The Differences?

ABSTRACT

The work on social entrepreneurship as a subdiscipline of entrepreneurship has developed in several directions to gain a better understanding of this multidimensional but still ill-defined research field. Until today, research has primarily focused on analyzing key similarities and differences between commercial and social entrepreneurship at the organizational level. At the individual level, the literature on commercial and social entrepreneurs is commonly driven by diverse heroic characterizations and archetypical examples, resulting in the traditional classification of the weight given to financial aims in relation to social goals. To provide a more detailed differentiation, this analysis highlights key similarities and differences between the two entrepreneurial concepts. Therefore, we use the long neglected but recently revived personality approach to shed light on the differences in their personalities using the Five Factor model of personality. Overall, this article provides a rare empirical examination of commercial and social entrepreneurs with regard to their personality traits to better understand the role of personality in the entrepreneurial process and to identify where a line can be drawn between both of them, if there is one at all.

Keywords: social entrepreneurship, entrepreneurship, personality

INTRODUCTION

Entrepreneurship is a multi-dimensional discipline, which comprises elements of various research fields, i.e., economics, psychology, sociology, and strategic management (Mitchell et al., 2002). According to Hisrich, Peters, and Shepherd (2010), entrepreneurship is a dynamic process dedicated to the creation of economic and social welfare which also includes certain behavioral characteristics of the entrepreneur, i.e., initiative, innovative attraction of resources, or risk and uncertainty tolerance. Moreover, entrepreneurship is often defined as an opportunistic pursuit of economic wealth with the help of individual creativity operating in uncertain environments with scarce tangible resources (Austin et al., 2006; Mitchell et al., 2002). Even though the practice of entrepreneurship is as old as the trade between tribes and villages and the general concept of entrepreneurship was first defined more than 250 years ago (Austin et al., 2006), the term social entrepreneurship was first mentioned in academic journals in 1991 (Short et al., 2009). Accordingly, past research largely focused on commercial entrepreneurship with a strong emphasis of financial returns with little attention on social gains. The reliance on the free-market system's 'invisible hand' placed the responsibility of public and social goods in the hands of the governments (Nga and Shamuganathan, 2010). However, bureaucracy and the inflexibility of governments that made well intended social policies ineffective, eventually resulted in the rise of social entrepreneurs trying to fill the gaps by emphasizing social over economic value (Dees, 2007; Haugton, 2008).

Since the first appearance of the term social entrepreneurship in academic management journals, research has developed in several directions to enrich the current knowledge on the emerging but still ill-defined multidimensional concept of social entrepreneurship (Weerawardena and Mort, 2006). Past research has outlined that a better understanding in the under-researched area of social entrepreneurship and social entrepreneurs is essential (e.g., Dees, 1998). For instance, it has been shown that social entrepreneurs find effective and innovative ways to address persistent social problems of our time and set up new creative organizations (e.g., Zahra et al., 2009) which in turn achieve a competitive advantage by focusing on social missions (e.g., Weerawardena and Mort, 2001). Until today, research has tended to analyze the key similarities and differences between commercial and social entrepreneurship primarily at the organizational level (Austin et al., 2006).

Our contribution to this field is to analyze the differences at the individual level by specifically addressing the gap between commercial and social entrepreneurs and shedding light on the differences in their personalities. Overall, the present study provides a rare empirical examination of commercial and social entrepreneurs with regard to their personality traits to better understand the role of personality in the entrepreneurial process and to identify where a line can be drawn between both of them, if there is one at all.

The rest of the paper is structured as follows. First, we review existing literature on commercial and social entrepreneurship at the organizational level followed by commercial and social entrepreneurs at the individual level. Furthermore, we discuss the literature on the personality approach in entrepreneurship and develop four propositions which are in the scope of our analysis. Second, we explain the method used and provide information about our sample. Third, we analyze the propositions and discuss the results of our study. Finally, the paper concludes with policy, educational, and research implications of our analysis followed by a short section on limitation and future research.

THEORY AND PROPOSITIONS

Social Entrepreneurship as a Subdiscipline of Entrepreneurship

Social entrepreneurship is often regarded as a subdiscipline of entrepreneurship and has gained much attention from researchers and entrepreneurship scholars all over the world in the last years (e.g., Austin et al., 2006; Dacin et al., 2011; Dees, 1998; Mair and Martí, 2006; Peredo and McLean, 2006; Shaw and Carter, 2007; Weerawardena and Mort, 2006). Mair and Martí (2006) describe social entrepreneurship as a process in which resources are combined in new ways to explore and exploit opportunities for value creation by stimulating social change, meeting social needs, or creating new socially oriented organizations.

Austin et al. (2006) analyze two concepts of entrepreneurship – commercial (often referred to as traditional, business, or conventional) and social entrepreneurship. They postulate that both forms of entrepreneurship substantially differ in four different elements. First, they identify and exploit different types of opportunities; second, they have different approaches for mobilizing financial and human resources; third, they use different indicators to measure performance (e.g., financial indicators vs. social impact); and fourth, they pursue different fundamental missions (i.e., creating economic value vs. social value). However, this distinction between both concepts is certainly not dichotomous; it is rather a continuum ranging from purely commercial to purely social and even at the extreme ends, elements of both can be found. According to Austin et al. (2006), commercial entrepreneurship involves identifying, evaluating, and exploiting such opportunities that strongly facilitate in economic value, whereas social entrepreneurship comprises the identification, evaluation, and exploitation of those opportunities that particularly foster social value creation. In different investigations, several researchers, for example Peredo and McLean (2006), Weerawardena and Mort (2006), and Zahra et al. (2009), strongly emphasize the creation of social value over economic value and agree that this is one essential difference between commercial and social ventures. Accordingly, social ventures focus on creating social value by providing solutions to social problems rather than on the maximization of economic benefits, market growth, or profitability (e.g., Austin et al., 2006; Dacin et al., 2011; Shaw and Carter, 2007).

Even though there is a variety of definitions for social entrepreneurship which primarily focus on four distinguishing factors, i.e., individual characteristics of entrepreneurs, sphere of operation, process and used resources as well as mission (Dacin et al., 2011), there is yet no consensus of a common social entrepreneurship definition. The literature on commercial and social entrepreneurs as single actors has developed in several directions (e.g., Boluk and Mottiar, 2014; Nga and Shamuganathan, 2010; Miller et al., 2012; Renko, 2013; Thomson,

2002; Vega and Kidwell, 2007; Zahra et al., 2009) and was commonly driven by heroic characterizations or case studies that were highly diverse (Dacin et al., 2011). This diversity and the variety of discussions on where to draw a line between commercial and social entrepreneurs is largely caused by the weight given to financial aims in relation to social goals (Dohrmann, Raith, and Siebold, in press). Associated with significant contributions to communities and societies, social entrepreneurs adopt creative solutions to complex and persistent social problems (Zahra et al., 2009). Compared to commercial entrepreneurs, social entrepreneurs generally have a social mission on their agenda and need to avoid a drift too far away from their underlying social objectives (Hockerts, 2006). The social mission is a fundamental goal which generally addresses a social need or problem and focuses on social value creation and represents the major distinction between commercial and social entrepreneurs (e.g., Shaw and Carter, 2007; Peredo and McLean, 2006).

Despite this basic differentiation between both entrepreneurial types, the literature on entrepreneurship discusses the two concepts and debates on where to exactly draw the line between them. At the one extreme, the literature argues that social entrepreneurs exclusively concentrate on social gain and, therefore, neglect financial returns (Peredo and McLean, 2006). However, this rather narrow construct does not acknowledge the social entrepreneur's ambition to create a sustainable and self-financed venture (Mari and Martí, 2006). The other extreme in the literature focuses on financial goals and considers social objectives as rather subordinate, although profit-seeking actions are not necessarily in conflict with society's interest (Dean and McMullen, 2007). Between both extremes, there are numerous descriptions that highlight similarities of both concepts and claim that social entrepreneurs are one particular species in the genus entrepreneur (Dees, 1998). Regardless of whether or not a social mission is fundamental to a venture, the element of some social value creation is generally embedded in all forms of entrepreneurship (Austin et al., 2006). For instance, society benefits from any type of new venture because the entrepreneurs create new and valuable goods, efficiently combine resources, and develop sustainable business models to ensure not only a firm's survival and growth but also long-term employment.

In line with the previous literature on commercial and social entrepreneurship as well as on commercial and social entrepreneurs, it is reasonable to conclude that both types of entrepreneurs comprise commercial and social elements, independent of the underlying nature of their venture, i.e., they seek large financial returns or pursue a fundamental social mission. Therefore, we hypothesize that both, commercial and social entrepreneurs, do not regard themselves as being purely commercial or purely social, but rather show heterogeneity in their focus and consider themselves as being somewhere in between a continuum ranging from purely commercial to purely social.

Proposition 1. Neither commercial nor social entrepreneurs regard themselves as purely commercial or purely social.

The Personality Approach in Entrepreneurship

The literature on entrepreneurship has a long tradition and can be classified into three major genres: the functional, personality, and behavioral approaches (Cope, 2005 in Nga and Shamuganathan, 2010). The functional approach considers rational outcomes, whereas the personality approach outlines the characteristics of individual traits that define an entrepreneur. Finally, the behavioral approach involves the process of how an entrepreneur perceives and acts in the face of opportunities.

For more than two decades, researchers almost exclusively followed the behavioral approach and strongly refused investigating entrepreneurial personalities, as numerous studies concluded that personality and traits are not sufficiently related to the varied behaviors required

by entrepreneurs (Aldrich and Wiedenmayer, 1993; Brockhaus and Horwitz, 1986; Gartner, 1985, 1988; Low and MacMillan, 1988). Consequently, research on personality in entrepreneurship was not warranted. For example, Gartner (1985; 1988) claimed that the primary phenomenon of entrepreneurship is the entire and complex process of new venture creation in which the entrepreneur represents one part only. Following Gartner's view, the organization should be the primary level of analysis, and the entrepreneur should be viewed in terms of own activities that foster the creation of new organizations. Accordingly, research should focus on entrepreneurial behavior resulting in profitable venture creation and not on the personality traits of entrepreneurs.

Gartner's approach has not escaped criticism and has been vigorously challenged and revisited in more recent studies that provoked the reemergence of personality to entrepreneurship (e.g., Collins, Hagens, and Locke, 2004; Rauch and Frese, 2007; Shane, Locke, and Collins, 2003; Stewart and Roth, 2001, 2004, 2007; Zhao and Seibert, 2006; Zhao, Seibert, and Lumpkin, 2010). For example, Rauch and Frese (2007) conclusively describe how personality traits affect goal setting and strategy development, which in turn influence the creation of ventures and the corresponding business success. Similarly, Littunen (2000) reasonably argues that business activities are often developed as a part of an entrepreneur's personal life strategy and are, therefore, to a large extent characterized by an entrepreneur's personality characteristics. Moreover, several investigations (e.g., Brandstätter, 1997; Collins, Hagens, and Locke, 2004; Stewart and Roth, 2001, 2004, 2007; Zhao and Seibert, 2006) conclusively show that entrepreneurs differ significantly from non-entrepreneurs, e.g., managers, in terms of their personality traits, e.g., risk propensity, achievement motivation, conscientiousness, emotional stability, openness to experiences, agreeability. As a consequence, subsequent literature suggests the revival of personality research in entrepreneurship opposed to contradictory findings in earlier literature. However, researchers are advised to apply more sophisticated theories and methodological approaches (Rauch and Frese, 2007) to avoid a lack of theoretically derived hypotheses and research artifacts (Zhao, Seibert, and Lumpkin, 2010).

To further enrich the current knowledge on the emerging but still fuzzy concept of social entrepreneurship, we use the long neglected but recently revived personality approach to address the gap between commercial and social entrepreneurs by shedding light on the differences in their personalities.

Personality Traits and Propositions

Personality is considered as a stable set of characteristics or enduring dispositions that only slightly change over time (McCrae and John, 1992). Research on personality has a long tradition, especially in the field of psychology, and resulted in the prevalent Five Factor Model developed by McCrae & John in 1992. This model postulates that an individual's variety of personality variables can be described by five major personality dimensions, also referred to as the Big Five, which provide a meaningful and parsimonious framework (Caliendo, Fossen, and Kritikos, 2014). These Big Five personality dimensions are Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness.

Neuroticism. According to John et al. (2008), this personality dimension "...contrasts emotional stability and even-temperedness with negative emotionality, such as feeling anxious, nervous, sad, and tense". Individuals who score high on this dimension have a predisposition towards unpleasant and negative experiences, are likely to develop psychiatric disorders, easily fall into depressions, lack control over their impulses and longings, are angry and hostile, and have a low emotional stability (Chell, 2008; Llewellyn and Wilson, 2003; McCrae and John, 1992). In contrast, persons with low scores on this trait are calm, stable, emotionally strong,

and do not surrender to adversity (Zhao et. al, 2010). In entrepreneurship, environments bear high levels of uncertainty and pressure, leading to challenging, complex, and stressful situations such as the management of scarce resources or pressure from stakeholders (Nga and Shamuganathan, 2010). Thus, entrepreneurs would be better off if they are emotionally stable, stress resistant, tolerant towards pressure, patience to handle the long-lasting process of change in spite of restricted resources or institutional obstacles, and, finally, optimistic even if personal and financial stakes are involved in the venture. Previous studies proposed low Neuroticism scores for entrepreneurs and, according to some expert interviews, also for social entrepreneurs (Caballero et al., 2013). Hence, we assume that both entrepreneurial types show equally low scores in Neuroticism.

Extraversion. This dimension "...implies an energetic approach toward the social and material world and includes traits such as sociability, activity, assertiveness, and positive emotionality" (John et al., 2008). Individuals who are highly extraverted are friendly, sociable, optimistic, active, enthusiastic, and assertive (Chell, 2008; Llewellyn and Wilson, 2003; McCrae and John, 1992; Zhao et. al, 2010). Conversely, people with low Extraversion are characterized as being shy, quiet, and emotionally dull (McCrae and John, 1992). In entrepreneurship, founders are frequently confronted with numerous stakeholder groups. The strong interaction with diverse stakeholders is even more apparent for social entrepreneurs, as they must inspire others to support their social missions and need to balance different interests while often being financially dependent on financiers or governmental institutions (Barendsen and Gardner, 2004; Nga and Shamuganathan, 2010). Taking into account that the organizations of social entrepreneurs often only exist to resolve a strong personal discomfort with a current social situation, we assume that social entrepreneurs are extremely enthusiastic, full of energy, proactive, and communicative with a strong drive to achieve a social mission and to inspire others (Adomaviciute et al., 2012; Barendsen and Gardner, 2004; Nga and Shamuganathan, 2010). As a consequence, we anticipate social entrepreneurs to be more extraverted than commercial entrepreneurs.

Openness to experience. This dimension generally describes the individual's intellectual interests, the ability to seek new experiences, and to explore novel ideas. John et al. (2008) shortly define Openness as a factor that "...describes the breadth, depth, originality, and complexity of an individual's mental and experiential life". Individuals with high scores in this dimension tend to be liberal, curious, creative, artistic, original, innovative, and have original thoughts (Llewellyn and Wilson, 2003; McCrae and John, 1992; Zhao et. al, 2010). In the case of entrepreneurs, high levels of Openness are additionally associated with the capacity to achieve radical changes of systems through innovation even in the face of resistance by more conventional thinkers (cf. Schumpeter's famous phrase "creative destruction", 1942). However, entrepreneurs may also appear to be impulsive, overly inquisitive, and easily bored within unchanging environments (Nga and Shamuganathan, 2010). Past analyzes demonstrated that the work of social entrepreneurs focuses especially on imagination, invention, and innovation (Dees, 1998; Light, 2009) with a strong and open-minded perception of social problems on a global scale (Adomaviciute et al., 2012). Accordingly, we expect social entrepreneurs to be more open than commercial entrepreneurs.

Agreeableness. This dimension generally measures attitudes and behavior towards others and is defined as a personality trait that "...contrasts a prosocial and communal orientation toward others with antagonism and includes traits such as altruism, tender mindedness, trust, and modesty" (John et al., 2008). Individuals who are highly agreeable have a forgiving and trusting nature, are concerned about others, generous, supportive, and modest (Chell, 2008; Llewellyn and Wilson, 2003; McCrae and John, 1992; Zhao et. al, 2010), whereas low scores in Agreeableness indicate self-centered and hard-bargaining persons (Caliendo et al., 2014). In

a preliminary study, Zhao and Seibert (2006) found that Agreeableness does not predominate commercial entrepreneurs, which suggests a certain need for autonomy for business creation, given the capacity to conduct a tough business, to follow own interests, and even to manipulate others to foster the survival and growth of a venture. However, Agreeableness in interpersonal relationships also includes the ability to empathize with others, to promote harmony in social interactions, and to stimulate social consensus while upholding a mutual understanding and trust (Caliendo and Kritikos, 2008 in Nga and Shamuganathan, 2010; Llewellyn and Wilson, 2003; Mair and Ernesto, 2003). Moreover, Mair and Noboa (2003) assume that empathy and moral judgment are relevant traits that distinguish social from commercial entrepreneurs. As a consequence, we anticipate social entrepreneurs to be more agreeable than commercial entrepreneurs.

Conscientiousness. The final dimension refers to an individual's accurateness, conformance with rules and procedures as well as the maintenance of high quality and performance standards (Llewellyn and Wilson, 2003). John et al. (2008) define Conscientiousness as a dimension that "...describes socially prescribed impulse control that facilitates task- and goal-directed behavior, such as thinking before acting, delaying gratification, following norms and rules, and planning, organizing, and prioritizing tasks". Conscientious entrepreneurs are self-disciplined, organized, law-abiding, preserving, goal-oriented, and hard-working (Chell, 2008; Llewellyn and Wilson, 2003; McCrae and John, 1992; Zhao et al., 2010). Conscientiousness was found to be one of the personality traits that predominates entrepreneurs as they have a high achievement motivation that positively influences the competitive advantage and survival of the firm (Zhao and Seibert, 2006). As both, commercial and social entrepreneurs, are in charge of the survival and growth of their venture and face competition for customers and funding (Light, 2009; Weerawardena and Mort, 2006), they must withstand great pressures, focus on their goals, set up strategic plans, and make reasonable decisions. Therefore, we expect both entrepreneurial types to show equally high degrees in Conscientiousness.

To sum up, the proposition concerning the differences in the five personality dimensions of commercial and social entrepreneurs for this research is formulated as follows:

Proposition 2. Social entrepreneurs are more extraverted, open, and agreeable than commercial entrepreneurs and are equally neurotic and conscientious.

METHOD

Measures

We were interested in collecting all significant information published on commercial and social entrepreneurship and the relation between personality and entrepreneurship. Therefore, we conducted an extensive literature review relevant to our proposed research hypotheses. Thereafter, we developed a comprehensive online survey consisting of five different sections in order to empirically investigate our four research propositions. The first section of this survey included questions related to the venture of the entrepreneur. Entrepreneurs were asked to report the products and services provided by their enterprise, the branch and location of operations of their project, the number and type of employees and volunteers, the types of revenue streams as well as the highest goal or mission of their firm. In the second section, respondents were also asked to self-classify themselves using a nine-point Likert scale ranging from a purely commercial entrepreneur (1) to a purely social entrepreneur (9). Likewise, they were asked to classify their venture on a range between a purely commercial enterprise (1) and a purely social enterprise (9). In the third section of the questionnaire, respondents were asked to assign a total of twenty-five different facets of the Big Five personality traits (five facets for

each personality trait) on a nine-point Likert scale to be more typical for either commercial entrepreneurs (1) or social entrepreneurs (9), enabling us to create stereotype personality profiles of commercial and social entrepreneurs representing the general beliefs people hold about them. The fourth section included the 44 items of the well-established and widely accepted Big Five Inventory (BFI) (John, Donahue, and Kentle, 1991; John, Naumann, and Soto, 2008) measured on a Likert scale ranging from zero (not at all) to four (very much) in order to assess the respondents personality. The fifth and last section contained demographic questions related to the entrepreneur, such as gender, age, nationality, and religious belonging.

Sample and Procedure

The purpose of this study is to examine personality differences between commercial and social entrepreneurs. As an individual's personality is often biased by the culture he or she was brought up or lives in, sampling only entrepreneurs of one country would distort data unpredictably. Thus, a sample of entrepreneurs from all over the world appeared appropriate for this study. Suitable entrepreneurs for this research must meet several criteria: First, they need to be the founder or co-founder of a commercially or socially oriented venture to ensure their status as an entrepreneur. Second, the respondents' ventures must be already in business to exclude aspiring or nascent entrepreneurs that only exhibit an entrepreneurial intent.

Following the above selection criteria, we contacted entrepreneurs through different channels in July and August 2014. Approximately 150 entrepreneurs of commercial ventures were approached through appropriate online social networks and forums for entrepreneurs. With the support of the Ashoka Europe network, the world's oldest and largest non-profit organization supporting social entrepreneurs all over the world, an email invitation to our online survey was sent out to a group of approximately 100 entrepreneurs of social ventures.

72 entrepreneurs of commercial ventures and 102 entrepreneurs of social ventures started the questionnaire, of which 33 commercial and 30 social entrepreneurs completed the entire questionnaire. After a thorough screening of the answers the entrepreneurs gave to the questions regarding their ventures (products and services, branch, number of employees and volunteers, types of revenue streams, and highest goals/mission) and an additional collection of online information about the ventures (the venture's websites, if available), we had to reclassify three commercial ventures as social and six social ventures as commercials.

ANALYSIS AND RESULTS

Testing Proposition 1

The first part of the analysis investigated the self-classification of entrepreneurs working in commercial and social ventures. Therefore, we categorized the respondents according to their type of venture. By looking at the frequency distribution (Figure 1), it is possible to identify a difference among entrepreneurs of both types of ventures with regard to their self-classification at first sight. The entrepreneurs working for a commercial venture position themselves along the entire symmetric 9-point Likert scale which represents the continuum ranging from being a pure commercial entrepreneur (1) to being a pure social entrepreneur (9). Remarkably, six of the respondents consider themselves as pure social entrepreneurs and an additional nine entrepreneurs classified themselves predominantly as being social. Moreover, the entrepreneurs working in social enterprises almost never think of themselves as being purely or predominantly commercial. In fact, only one of these twenty-five entrepreneurs categorizes himself as a commercial entrepreneur. The majority working in social enterprises regard themselves as being pure social entrepreneurs.

*** Insert Figure 1 about here ***

Next, we inversely recoded the answers given only by the entrepreneurs working for a commercial venture on this self-classification question. The original value of 1 (being a pure commercial entrepreneur) now corresponds to a value of 9 and vice versa. Thereby, the highest score on this variable now indicates the pure classification for both groups of entrepreneurs and the results of the following statistical tests are easier to interpret.

Thereafter, we examined the differences of self-classification for our two independent sub-samples of entrepreneurs working in commercial ventures and those working in social ventures. In order to do so, we chose the Mann-Whitney-U test (Mann & Whitney, 1947), which is an often underestimated yet very powerful non-parametric equivalent to the independent student t-test and should be used whenever the assumptions for a t-test (continuous data, normal distribution) are violated (Sheskin, 1997), the sample sizes are equal, or when the smaller sample has the larger variance (Zimmermann, 1987). This rank-sum test examines whether the samples represent two identical populations with equal medians (null hypothesis) or they do not (alternative hypothesis). With a p-value less than or equal to .05, the null-hypothesis is rejected, and it can thus be concluded that the two populations differ significantly in terms of the analyzed variable.

The descriptive statistics and the results of the Mann-Whitney-U-Test are presented in Table 1. As hypothesized, the results show that the self-classification between entrepreneurs of commercial and social ventures differs significantly ($p = .000$). When comparing the medians and mean ranks of both groups, we can see that entrepreneurs of social ventures rate themselves more towards the extreme (i.e., being a pure social entrepreneur) (median = 9.00, mean rank = 42.86) than do entrepreneurs working in commercial ventures (median = 5.50, mean rank = 24.86). We can even set forth, that, in general, entrepreneurs working in social ventures regard themselves as pure social entrepreneurs.

Overall, these results yield several conclusions. First, entrepreneurs working in social enterprises strongly consider themselves as pure social entrepreneurs and are thus more focused in their orientation than entrepreneurs working in commercial enterprises. This might be due to the fact that entrepreneurs of social ventures have a strong personal social mission and regard their venture as their arm's extension that allows them to realize their vision. Furthermore, social entrepreneurs may view their personal integrity and responsibility as crucial factors and constantly fear to jeopardize their social mission when commercial aspects are considered. Especially the access to funding and donations often demands highly responsible social entrepreneurs with integrity and without hidden agendas, thus forcing them to act in a very strict and uncompromising socially oriented way. Funding and donations are often required in the venture creation stage, whereas commercial aspects may come into play in later stages when social entrepreneurs want to further develop their venture and gain more independence of social investors. Hence, their self-classification as a more commercial or a more social entrepreneur may change over the years with the development of their ventures.

Second, we find both types of entrepreneurs – i.e., those who are either commercially or socially predispositioned – working in commercial ventures. On the one hand, this finding may indicate that entrepreneurs of commercial ventures seem to always see the social aspect of their businesses and the products or services they provide and would, therefore, be in line with Austin et al. (2006) and Venkataraman (1997). Both studies mention that entrepreneurs create new markets and jobs as well as sustainable business models ensuring long-term employment, which in turn benefits society. On the other hand, this result may indicate that some mission-driven and socially predispositioned entrepreneurs are able to set up their businesses in a self-financing and sustainable way. Thus, the venture minimizes the dependency on social investors, e.g., by generating market revenues with the social mission (Dohrmann et al., 2015),

which indicates that the venture operates like a commercially oriented enterprise. This independence of funds and donations yields to a huge flexibility in using the generated profits. For example, the generated profits can be used to assert the position in the market or to scale the venture to new markets. However, social entrepreneurs need to follow innovative strategies in the strong competition for market opportunities and funding (Light, 2009; Weerawardena and Mort, 2006), which additionally fosters the development of further commercially oriented revenue streams. Even though the venture might become less representative of a stereotypical or traditional social venture (e.g., a non-profit organization), the socially predisposed entrepreneur might still consider it as a means to an end, i.e., creating social value by realizing his personal social vision while gaining financial independence.

*** Insert Table 1 about here ***

Testing Proposition 2

Next, we analyzed the differences of commercial and social entrepreneurs with regard to their personality. This time, we categorized the respondents according to their self-classification because according to the previous analysis we do not insinuate that commercial and social entrepreneurs always work in the respective commercial or social venture. This time, we excluded seven respondents, as they did not assign themselves clearly to either type of entrepreneur (i.e., they were indifferent). Further, we transformed the answers given on the used Likert scale with original values ranging from 1 to 5 into new values ranging from 0 to 4 for easier comparison with results of the hypotheses tests in the forthcoming sections.

Again, we applied the Mann-Whitney-U-Test to detect whether there are differences in the single five personality dimensions between the commercial and social entrepreneurs. The results of this hypotheses test as well as the descriptive statistics are shown in the third and fourth column of Table 2. The mean ranks for Neuroticism are almost equal for both groups and there are apparent differences of the mean ranks for Extraversion, Openness, and Conscientiousness between the entrepreneurs; however, these were not found to be significant at the .05 level when evaluated with the exact two-tailed between subjects Mann-Whitney-U-Test. Thus, we cannot conclude that commercial and social entrepreneurs are different in terms of their overall levels of Neuroticism, Extraversion, Openness, and Conscientiousness. Nonetheless, the test revealed that social entrepreneurs (median = 3.22, mean rank = 32.90, $p < .01$) are significantly more agreeable than commercial entrepreneurs (median = 2.94, mean rank = 20.58, $p < .01$), independent of whether they are actually working in a commercial or social enterprise. Figure 2 (A) visualizes the personality profiles of both types of entrepreneur.

This result lends support to Mair and Noboa (2006), who propose that moral judgment (one facet of Agreeableness) is an essential discriminating variable between commercial and social entrepreneurs. It is also in line with previous findings by Nga and Shamuganathan (2010), who examined the influence of the Big Five personality dimension on five dimensions of social entrepreneurship, i.e., social vision, sustainability, social networks, innovation, and financial returns. In their study, they found out that Agreeableness ($\beta = .562$) and Openness ($\beta = .297$) are the only two personality dimensions that have a strong positive influence on the social vision of a venture.

As social entrepreneurs try to stimulate social consensus and promote harmony in social interactions, they certainly need a high degree of empathy and mutual understanding (Caliendo and Kritikos, 2008 in Nga and Shamuganathan, 2010; Llewellyn and Wilson, 2003). Furthermore, social entrepreneurs often work together very closely with social investors supporting their missions. As a consequence, they need to be agreeable, trustworthy, and supportive with a low need for autonomy to receive required funding and donations for their social missions. In contrast, commercial entrepreneurs obtain a higher need for autonomy as

they rather conduct business in a rather harsher way and follow their own interests (Zhao and Seibert, 2006). These interests may largely include economic value which, of course, can be supplemented by social value (e.g., due to socially responsible behavior) as well.

Our analysis reveals that commercial and social entrepreneurs are similar in the personality dimensions Neuroticism and Conscientiousness. This result verifies that both types of entrepreneurs need to be emotionally stable and stress resistant because they are confronted with complex situations in challenging environments and, hence, experience stress and uncertainty in entrepreneurial activities. Furthermore, commercial and social entrepreneurs both show achievement motivation, self-discipline, hard-working skills, and goal-orientation. Independent of whether or not they work in commercial or social ventures, entrepreneurs compete for market opportunities and/or funding, which requires emotional stability and conscientiousness to achieve a competitive advantage and ensure entrepreneurial survival. These findings support past studies conducted by Caballero et al. (2013), Nga and Shamuganathan (2010), and Zhao and Seibert (2006).

Unexpectedly, we found that commercial and social entrepreneurs do not significantly differ in the personality dimensions Extraversion and Openness. A possible explanation may be the fact that both types of entrepreneurs have a variety of diverse stakeholder groups and, therefore, need to be friendly, sociable, optimistic, and enthusiastic. Another reason for this may be that entrepreneurs in commercial and social ventures have to work closely together with different people in achieving their vision, which requires the ability to communicate, to be proactive, and to inspire others to follow their vision. Moreover, both types must seek new experiences and explore novel ideas. Facing conventional thinkers and overwhelming resistance in established industries or markets, commercial and social entrepreneurs both need innovative and creative ideas to foster radical changes in existing systems.

*** Insert Table 2 about here ***

*** Insert Figure 2 about here ***

DISCUSSION

Conclusion

This paper has investigated the personality differences between commercial and social entrepreneurs. We have shown that entrepreneurs working in commercial ventures do not regard themselves to be purely commercial, but also possess a social disposition. In contrast, the majority of entrepreneurs working in social ventures unquestionably considers itself to be pure social entrepreneurs. Furthermore, our study has provided a deeper insight into similarities and differences of commercial and social entrepreneurs with regard to their personalities. As the results indicate, entrepreneurs who consider themselves commercially oriented differ from entrepreneurs who regard themselves as social entrepreneurs only in terms of lower levels of Agreeableness.

Implications

These results have important implications for policy makers. Although the emergence and operation of social ventures is a fundamental goal of policy makers, we have shown that even entrepreneurs working in commercial ventures are found on the entire spectrum ranging from being purely commercial to purely social. It is reasonable to assume that such entrepreneurs who have a social predisposition are honestly concerned about society and, thus, manage their ventures in accordance to their personal nature, e.g., through corporate social responsibility and the initiation of social projects within the scope of the firm. Therefore, policy makers may not only consider the type of venture that applies for financial and non-financial support, but also take a closer look at the nature of the respective entrepreneur, allowing them to directly and indirectly support a larger number of social projects and initiatives.

Our research could also be a useful aid for educators. The findings of our research have shown that commercial and social entrepreneurs are not as that different as they have previously been conceived. Nonetheless, social entrepreneurs are found to be more agreeable (i.e., trusting in nature, concerned for others, and supportive) than commercial entrepreneurs. As a consequence, educational programs supporting social entrepreneurs should be tailored to address this personality dimension in particular.

The results of our study raise important questions for further investigations. Future research might explore the various reasons why some socially predisposed entrepreneurs rather choose to set up a commercial venture instead of a social venture. However, as our analysis revealed, Agreeableness represents the one and only personality dimension that actually distinguishes commercial from social entrepreneurs. As a consequence, future research might consider developing more accurate classifications of entrepreneurs.

Limitations

We are aware that our research has limitations. The first is the relatively small sample size, which caused the variables of interest to follow a non-normal distribution allowing non-parametric tests only. Thus, further data collection would be needed to investigate the differences between commercial and social entrepreneurs using other, parametric statistical inference tests (e.g., student t-test). Nevertheless, numerous studies have provided strong evidence that non-parametric tests perform equally well compared to their parametric equivalents.

The second limitation is that the information on the respondents' personality profile may be biased, as they may have given more socially desired responses (SDR), for which we did not control in this research. Nevertheless, it should be noted that the findings of other researchers, who investigated such a bias in the Big five personality dimensions (e.g., Paulhus et al., 1995; Graziano & Tobin, 2002; Paunonen and LeBell, 2012), are inconclusive and there is no agreement on whether the SDRs distort the measured variables at all. However, we believe that our research sheds light on the similarities and differences of commercial and social entrepreneurs with regards to their personality dimensions. In future research we, therefore, hope to further advance the personality approach in entrepreneurship with a special focus on the identity of commercial and social entrepreneurs.

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FIGURE 1
Frequency distribution for self-classification of Entrepreneurs

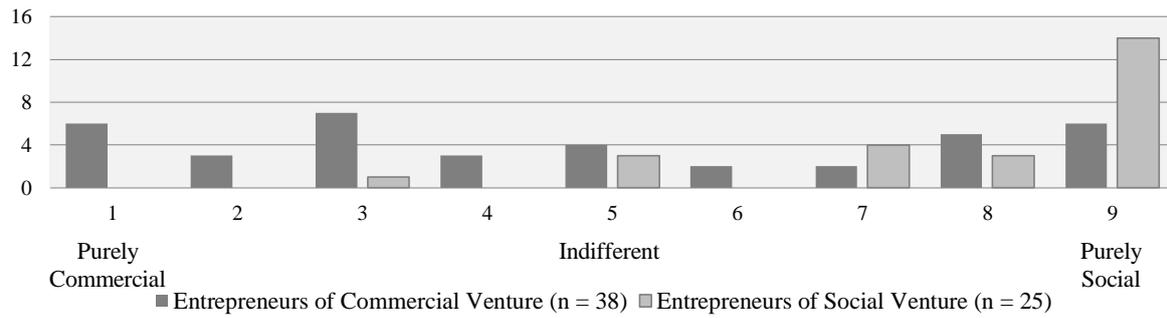


FIGURE 2
Personality Differences between Entrepreneurs and between Stereotype Entrepreneurs

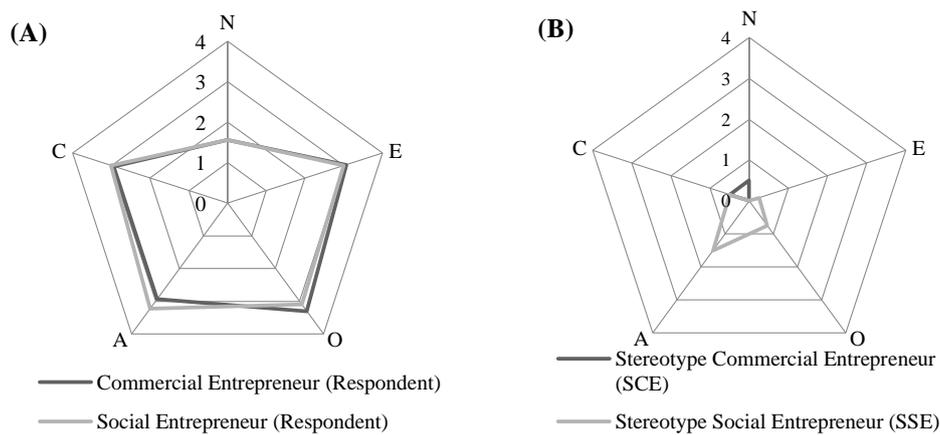


TABLE 1
Self-classification differences between Entrepreneurs

	Entrepreneurs of Commercial Ventures (n = 38)	Entrepreneurs of Social Ventures (n = 25)	Conclusion
Min	0	3	different
Max	9	9	
Median	5.50	9.00	
Mean	5.13	7.84	
SD	2.87	1.70	
MR	24.86	42.86	
MWU	-3.99**		

Note: MR = Mean Rank, MWU = Mann-Whitney-U test statistic, ** p < .01.

TABLE 2
Personality Differences Between Entrepreneurs And Between Stereotype Entrepreneurs

		Commercial Entrepreneur (respondent) (n = 20)	Social Entrepreneur (respondent) (n = 36)	Conclusion	Stereotype Commercial Entrepreneur (SCE) (n = 63)	Stereotype Social Entrepreneur (SSE) (n = 63)	Conclusion
Neuroticism	Min	.38	.13	identical	0	0	different
	Max	3.50	2.88		4	4	
	Median	1.56	1.56		.50	.00	
	Mean	1.61	1.51		.97	.29	
	SD	.77	.71		1.03	.65	
	MR	28.98	28.24		78.26	48.74	
	MWU		-.163			-4.856**	
Extraversion	Min	1.63	1.25	identical	0	0	identical
	Max	3.88	4.00		4	4	
	Median	3.06	3.00		.00	.25	
	Mean	2.98	2.84		.53	.77	
	SD	.60	.74		.95	1.11	
	MR	30.00	27.67		58.82	68.18	
	MWU		-.514			-1.541	
Openness	Min	1.30	1.80	identical	0	0	different
	Max	3.90	3.90		4	4	
	Median	3.30	3.10		.00	.75	
	Mean	3.14	3.03		.36	1.09	
	SD	.64	.50		.86	1.15	
	MR	31.35	26.92		48.44	78.56	
	MWU		-.977			-4.971**	

Agreeableness	Min	1.67	1.56	0	0
	Max	3.44	4.00	3	4
	Median	2.94	3.22	.00	1.50
	Mean	2.74	3.17	.29	1.54
	SD	.54	.51	.56	.91
	MR	20.58	32.90	39.60	87.40
	MWU		-2.719**	different	-7.585**	different
Conscientiousness	Min	1.78	1.44	0	0
	Max	3.89	4.00	3	3
	Median	2.94	3.00	.50	.50
	Mean	2.88	2.98	.72	.67
	SD	.62	.64	.70	.71
	MR	27.10	29.29	65.63	61.37
	MWU		-.480	identical	-.666	identical

Note: MR = Mean Rank, MWU = Mann-Whitney-U test statistic, ** $p < .01$.

Entrepreneurial Passion: Emotions, Meanings and Identities within Fringe Theatre

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Entrepreneurial Passion: Emotions, Meanings and Identities within Fringe Theatre

This paper explores the emotional dynamics of entrepreneurship through an analysis of UK based small scale independent theatre companies (SSTCs) – generally known as ‘fringe’. More specifically, it seeks to investigate emotions of passion through the meanings SSTC founders attach to their work and they underpin entrepreneurial identities. Based on semi-structured interviews with 20 SSTC founders, results point to the multiple ways - both positive and negative - in which passion can be expressed including a deep, often obsessive attachment to the enterprise that underpins a strong identification with the work. Passion is shown to be generative in that it supports and reproduces fragile identities whilst creating the conditions, through obsessive attachment, for potential failure and struggle.

Introduction

This paper explores the emotional dynamics of enterprise through an analysis of UK based small scale independent theatre companies (SSTCs). More specifically, it seeks to investigate a) emotions of passion through the meanings SSTC founders attach to their work and b) how passion underpins entrepreneurial identities. While generally small scale and less than profitable, SSTCs conform to Karp’s definition of entrepreneurs as people who “change certain conditions in order to create value around perceived opportunities, either within an existing enterprise or a new venture” (Karp, 2006: 292) - where value can refer to aesthetic and creative capital. Despite a relatively low survival rate, the small scale independent sector, sometimes known as ‘fringe’, plays a vital role – providing ‘life blood’ that feeds into the established national and regional institutions as well as the commercial arena. Whilst little data exists about the numbers and finances of such small scale initiatives, they are a vital part of the theatre world whose national worth in the UK exceeds £5 billion annually (Theatre Futures, 2010). Yet SSTCs attract little formal recognition or public funding for their efforts relying instead on personal drive, passion and dedicated commitment to create and perform drama as a means of conveying value (Holden, 2006).

High levels of emotionality are accordingly involved as individuals negotiate the often conflicting imperatives of creating drama and achieving funding and other support. However, in a general context, while the need to incorporate emotional dimensions of entrepreneurship is entering discussions of how entrepreneurialism is understood and performed (Goss, 2005), few studies have made it a central concern. As exceptions, some work has focussed on the significance of passion, generally defined as an intense, driving or overpowering emotion such as enthusiasm, love or joy (Linstead and Brewis, 2007), in understandings of entrepreneurship (e.g. Baron, 2008; Cardon et al., 2009; Chen et al., 2009) – though such work has tended to adopt a teleological approach that orients passion as a positive factor behind business success. Relatedly, there has been limited work on entrepreneurship as a social and emotional performance (Gartner, 1988, 2001) – an orientation that foregrounds the significance of identity work and social interaction (Du Gay, 1996; Goss, 2005; Shane et al., 2003).

Through our research site, and drawing on interview data with 20 SSTCs, we accordingly draw on a social constructionist epistemology to investigate the emotional dynamics of entrepreneurship, focussing on the significance of passion for the meanings that SSTCs give to their work and for the construction and management of entrepreneurial identities. In so doing we contribute to recent relational and discursive approaches to the study of entrepreneurship and give empirical insight into the neglected form of fringe theatre.

Entrepreneurship as Identity and Performance

Models of entrepreneurship have encompassed a variety of perspectives (Deakins & Freel, 2006). These include resource-based perspectives, embodying functionalist accounts of the effects of opportunity and resources on an economic system (e.g. Fayolle, 2003; Katz, 2003); psychological perspectives that examine the characteristics and ‘traits’ of the entrepreneur in order to seek to identify ‘inner’ factors, such as risk propensity, autonomy and pro-activity, that contribute to success (as reviewed in Delmar, 2006) and behavioural perspectives that focus on what the entrepreneur actually does (e.g. Gartner, 1988). The latter accounts explore the behaviour and processes of entrepreneurship, and the sets of activities that comprise innovation and creativity from raising finance to marketing a new product. All conform to ‘rationalistic’ principles based on realism, facts, analysis and objectivity (Karp, 2006) and are oriented towards identifying those factors that make for entrepreneurial success. As has been argued (Jennings et al, 2005), the vast proportion of theory and research in the field has emanated from this paradigm.

By contrast, some recent thinking has been oriented towards an understanding of entrepreneurship as a social and spatial practice (Gartner, 2001). Referred to by Fletcher (2003) as the ‘fifth movement’ in entrepreneurial research, this moves away from a focus on factors that underpin success towards a view of entrepreneurship as a localised social performance or ‘becoming’ (Chia and King, 1998; Steyaert, 1997) – one which involves the management and negotiation of an entrepreneurial identity (Du Gay, 1996; Goss, 2005; Fletcher, 2003). This has a focus on the social processes and interactions through which entrepreneurial knowledge is constructed and conveyed and draws on the concept of entrepreneurship as discourse i.e. as signs, labels and rhetoric that serve to shape meanings and behaviour and to confer a sense of self. Located within a social constructionist theoretical orientation (e.g. Burr, 1995; Gergen, 1999), rather than seeing identity as a stable trait or ‘inner essence’, this orientation highlights its relational and contingent nature, foregrounding how identities are shaped through interaction and produced in specific contexts. Identity is thus an interactional accomplishment or a ‘manufacturing’ of self through discursive practices and performance.

In the context of small business, discourses (e.g. of heroism, initiative, discovery, risk) help construct an understanding of enterprise as well as what it means to be an entrepreneur. Entrepreneurialism is therefore not founded on inner traits but on social ‘performances’ that can draw on, and activate, dominant entrepreneurial discourses. These dominant discourses, currently privileged in many areas of organizational life (du Gay, 1996), are embodied in conventional models that emphasize size, growth and profit. Grounded in the rationality tradition (Cope, 2005; Mason and Stark, 2004), dominant entrepreneurial discourses prioritise planning, goal achievement and individualism and are often supported by a language that underpins an image of the entrepreneur (e.g. as individualistic and goal oriented). These can be seen to valorise particular ‘ways of doing’ and self-representations. Identities formed from these discursive regimes often entail elements of ‘maverick’ (Downing, 2005), hero or rule breaker (Holmquist, 2003) subjectivities - all of which are conceptualised on the ‘success’ of entrepreneurs and on how they portray themselves in the pursuit of goals (Downing, 2005). Rather than searching for entrepreneurial aspects that are ‘real’ or ‘true’ (Jones et al, 2008), this approach accordingly focuses on the social construction of meanings through interacting with others as entrepreneurs manage identity and make sense of their own experiences.

As Carter and Jones-Evans (2000) point out, entrepreneurs need to identify with the role and its norms, including role specific knowledge (e.g. business planning, budget control), appropriate language and expected conduct. This suggests that interpersonal relationships and

social dynamics are an important springboard for an individual to show entrepreneurialism and that these meanings can strongly influence, in localised contexts and based on normative expectations, how entrepreneurs present themselves (Holmquist, 2003; Dodd and Anderson, 2007). This has implications for SSTCs who must manage potentially conflicting identities that relate to entrepreneurialism (e.g. credibility, reliability) and to creative artistry that draws heavily, in the context of fringe, on radical experimentation and the avant-garde.

Performing Entrepreneurship and Emotions

The view of entrepreneurship as social performance recognises that experiences and behaviours are likely to have a strong affective base. This orients emotions as social constructs (Hochschild, 1997; Fineman, 1993) rather than as psychological states – given meaning in context and in specific interactions. This social constructionist approach places emphasis on how emotionality should be understood in relation to social practice, on the ways in which socio-cultural protocols underpin the performatory role of emotions and on how they shape interpersonal relations (Fineman, 2003). Emotions are thus integral to the management of interactions, drawn on and activated in self presentations that have implications for (e.g. professional, entrepreneurial) identity (Finkel and Parrott, 2006).

In this respect, entrepreneurs are likely to be governed by appropriate ‘feeling rules’ that capture commitment, drive and emotional energy as well as integrity, self- efficacy and self-control (Goss, 2005). As Holmquist (2003) argues, these rules form the affective base for the ontological process of ‘becoming’ and the uptake of an entrepreneurial identity. It is through this process that acceptance and social endorsement occurs (ibid). ‘Authentic’ social performances, largely defined by others and controlled by emotion work (Goffee and Jones, 2005), draw on and prompt appropriate feelings (integrity, commitment, reliability) that both convince and are seen as ‘true to self’.

This recognises identity as both emotional and relational. Thus, from Goss (2005), the interactions and social performances of entrepreneurship can be seen to be highly emotional in terms of the need to interpret emotions and to appraise emotional experiences and encounters in context, the need to present authentic self- confidence, the management of uncertainty in relationships with significant partners and stakeholders and the emotional energy demanded in processes of creativity. Highlighting the need for an approach that has affectivity at its core, Cardon et al (2005) apply the relational metaphor of parenthood (e.g. conception, gestation, infancy, adolescence, maturity) to illustrate some of these emotional dimensions. In so doing they shed light on aspects of entrepreneurial behaviour that may seem illogical from a hegemonic rational perspective, such as cognitive biases that minimise risk and overlook work-based problems and deficiencies (parental love is blind); entrepreneurial persistence in the face of adversity (a parent never gives up) and extreme devotion that involves personal sacrifice and delayed gratification (parents put children first). As Karp (2006) points out in a similar manner, entrepreneurs do not always do the ‘right thing’ and instead act according to feelings and intuition and engage in a construction of a future based on their convictions and dreams.

Such work draws attention to significance of passion as a specific form of emotion in these contexts. Coming largely from a cognitive psychological perspective, studies have explored how interactions suffused with excitement and enthusiasm can encourage emotional contagion and so draw in prospective employees, partners and financial backers (Goss, 2005). Largely seen as positive affect, passion can lead to benefits such as venture growth (Baum and Locke, 2004), facilitating innovation through a sense of empowerment and energy and acting as a driving force for entrepreneurs to realise their vision and dreams (Ma and Tan,

2006; Chang, 2001). Taken together, these emotional dynamics may be particularly pertinent to small theatre where both charisma and deference can characterise key relationships (e.g. with cast, with employees, with potential supporters); where there accordingly exists potential for enthusiasm as well as for disillusionment and disappointment; where support for often convention breaking innovations must be maintained; where ideologies of motivation are grounded in notions of dedication and commitment and where financial backing must be negotiated (e.g. through persuasion and ‘charm offensives’) with limited expectation, on the part of investors, of return.

While the above discussion suggests the need for the inclusion of emotions into the analysis of entrepreneurship and entrepreneurial identities, empirical studies which have directly addressed this dimension are scant (Karp, 2006; Goss, 2005; Cardon et al, 2005). This is set against a need, recognised in the literature, for greater attention to be paid to the social construction of entrepreneurial identities (Jones et al, 2008; Fletcher, 2003; Foss, 2004; Downing, 2005) as well as for a socially constructionist (as opposed to psychological or cognitive) orientation to the significance of emotions. As Lindgren and Packendorff (2009) argue, research on entrepreneurship over-rely, in a largely unreflective manner on established (positivistic) epistemologies, questions and methods that, from Gartner and Birley (2002) have served to ‘normalise’ and narrow the field. Goss (2005) accordingly advocates a micro-sociological approach that puts the emotional dynamics of social interaction and relational notions of subjectivity at the centre of analysis. This paper goes some way to fill this research gap and address these issues by exploring the emotional dynamics of enterprise and how SSTC founders manage, draw on and activate emotions as they negotiate an entrepreneurial identity. In so doing, we highlight some of the emotional dynamics of passion in the ‘doing’ of entrepreneurialism in this context.

Context and Method

Following from the above, this paper draws on an orientation informed by social constructionist methodology to explore, in the context of small theatre, how men and women present themselves as entrepreneurs and how they manage an entrepreneurial identity. The study was guided by two key questions:

- a) How do emotions of passion infiltrate the meanings SSTC founders attach to their work?
- b) How do emotions of passion underpin entrepreneurial identities in this context?

The paper is based on a project, funded by the ESRC, the Institute for Small Business and Entrepreneurship (ISBE) and Barclays Bank. In conjunction with a successful London based theatre production company (‘Play-On’), this project had as its remit the motivations, aspirations and behaviour of SSTCs in order to highlight the emotional dynamics of entrepreneurial activities. Fringe theatre broadly refers to non-mainstream entertainment where performances are small scale (‘one-person’ shows are not uncommon), technically sparse and often comprise a single act. Productions take place in small local venues (e.g. pubs, halls) or at festivals – where new scripts, especially ones on more obscure, ‘edgy’ or unusual material, are showcased. Within this context, Play-On, as a production company committed to new theatre work, has the mission to provide support for fringe theatre makers by giving writers and performers the space and opportunity to produce and get feedback on their work - and to introduce their dramatic performances and ideas to other potential producers or venue programmes.

The research drew on a socially constructed orientation outlined above that sees identity as relational and in process and which conceives of emotions as contextual and grounded in

interactions. From this perspective, the interview context can be seen to comprise a social interaction and self-presentation which has its own set of meanings and values and which is part of an ongoing identity management process. The question is not therefore whether the interviews reflect 'true' attitudes and feelings but how participants constitute themselves as they discuss their experiences. In this respect, interviews covered key themes relating to the history of the company and how it was formed; key challenges faced; motivations that sustain the ongoing engagement with fringe; hopes for the future and notions of success.

Interviews were conducted with 20 SSTC founders (12 women and 8 men) all of whom had been working in fringe theatre, as either 'solo' performers or as a small group, for between one and eight years. Interviews lasted from between one hour and one and a half hours and were transcribed in full. Data was analysed thematically through a process of coding and identification of themes and subthemes. Guided by the research questions above, patterns were identified that related to expressed emotions, representations of creativity and the creative identity and representations of entrepreneurialism. These patterns were then investigated further for subthemes based, from Taylor and Bogdan (1989, p.131), on "conversation topics, vocabulary, recurring activities, meanings, feelings, or folk sayings and proverbs". Thus, from the broad pattern of strong feeling, sub-themes of attachment, sacrifice and isolation were identified. This obsessive attachment underpins fragile identities while exclusive attachment to creative artistry and antipathy towards commercial and administration expertise was a likely contributor to experiences of isolation in the industry.

Attachment and Sacrifice

Founders universally expressed strong feeling for their work and for their dramatic enterprise – feelings that find purchase in conceptualisations of passion, defined at a simplistic level as a 'very powerful feeling' (Cambridge On-line dictionary, accessed April 1st 2013). Passion was conveyed through expressions of commitment, dedication to and exclusive focus on the enterprise - conveyed through a language of embodied, physical attachment to what was commonly described as 'our work'.

"that moment of creating something...it's just alive and its present, that's what I love"

"the love of actually performing, physical active performing in front of an audience and the buzz of that"

Despite the difficulties encountered (extreme lack of financial and other resources; struggles to find an outlet for the work), participants often felt an inner 'drive' to create drama. Passion therefore found purchase in persistence and tenacity in the face of struggle and challenge – to the extent that it was an "*inner necessity or an inner longing for creating something*":

"If you really want to do it – if you are passionate you'll find a way to do it"

"Why am I doing this? Why am I putting myself through this stress? And it's like, because I don't know what else to do – at that kind of really base level. I wouldn't know what else to do if I didn't make work".

This commitment to the enterprise was often in the face of extreme personal, as well as financial, sacrifice. Founders not only expended time and effort into the work, at the expense of other (e.g. social) activities, but the deep attachment to the product replaced other relationships:

"The most important thing for me to do is to make work, and like I'll give up anything for making work...you know that's the most important thing, more important than kind of relationships or money...."

One participant spoke in strongly emotive terms, of a friend's decision to give up theatre work – drawing on a language of heartbreak that would normally signify the intense emotional pain of loss or physical separation from a partner or spouse:

“It’s not just a job. I have this older friend of mine that has walked away. Her heart is broken by it yeah, it broke her heart, it is a lover, it’s a partner...once you go into it you are giving yourself up to a life where you accept you are living on very little and you’re giving most of your life over to planning, constructing, producing, creating”

Sacrifice and self-denial, as in the relinquishing of something valued (e.g. social relationships) for a higher purpose, signifies a strong, emotional attachment to the enterprise and the work produced. This identification with the product was also evidenced in meanings around self-discovery that were embedded in discussions of the rationale for the enterprise. Thus, the work and its performance became, in existentialist tones, a ‘pilgrimage’ and a means for new understandings of self:

“I’m not done exploring...it’s (the work) exploring me and it’s exploring how I feel about the world...there’s a reason why you chase after it and I’m looking for an answer to a question”

“When you’re living on so little money and your contemporaries say Jesus, how can you live like that? I’ve always enjoyed creating. It does give me a deeper sense of who I am...a better awareness of what I want to be”

“I just want to get to myself and discover what my work is about”

In fact, attachment to the work, inspired by deeply personal artistic visions, could preclude engaging with ‘mainstream’ arts channels that, while more lucrative, involve working on others’ texts: *“but personally, I identify with my work much more (than ‘jobbing’ actors) and that prevents me from doing just any project”*. This seriousness of intent and strong identification with the product (so that the work and the self are almost interchangeable) were also evident in the widely held objective to share, with almost evangelical zeal, fundamental ideas and interpretations with audience members.

It’s about how you look after your audience, engage with them.. that’s behind a lot of why I make my work. It’s about teaching people about things that you know like either they know already or they don’t know”

“I will explore a lot of emotions or tensions, relaxation, gaze with the audience”

Respondents referred to a need for intimacy with the audience and for sharing knowledge and understanding, currently located within the drama idea. The commitment and dedication of founders were accordingly translated into an eagerness to communicate core ideas so that audiences become ‘enlightened’ with new understandings. SSTC founders thus expressed strong feelings for their work and for the merits of their drama idea. These can be located within the emotional domain of passion. This passion is evident in expressions of deep attachment as well as in the levels of sacrifice and ‘offering’ of ideas and meanings to audiences. Passion furthermore underscores a strong identification with the dramatic product and its core values.

Fragile Identities

As Knights and Clarke (2014) point out, identities and the insecurities around them are often a ‘condition and consequence’ of the strive to be creative and successful in organizations – where desired and valued identities are predicated, precariously, on the judgments and

evaluations of others as well as on the sense of self. The single-minded attachment to and strong identification with the work of theatre making on the part of SSTC founders opened up space for fragility and self-doubt as resources and hopes were invested in and dependent on this one course of action. Recognition (“*it’s about being known*”) and being “*taken seriously*” as an artist can help to shore up fragile identities but are illusive in the sense that both must be constantly reaffirmed. As many participants noted, the creator and the work are only as good as the last performance – offering only a temporary and illusive sense of security:

“There was one performance, a one-off a one night event, and it had gone well but I couldn’t feel the success of it...I had created something an audience had been moved by but I couldn’t feel the enjoyment of it because you’re constantly striving and there’s always another area you are yet to fulfil things in”

“It’s such a big, energetic investment, emotional investment, intellectual investment...and you often think, you know, ‘oh my God am I actually presenting anything, giving an experience to an audience that is of any value??’”

Self-doubt is exacerbated by the considerable threat of rejection and failure – reflective of the crowded market, the highly competitive nature of fringe and uncertainties over audience engagement and satisfaction. The insecure nature of employment in the sector meant that all participants had some outside employment in order to bring in a steady income. While some were employed within the theatre industry (e.g. part time work teaching drama), most were in more mundane jobs such as receptionists, waiting on tables, administration. An instrumental approach towards such work (“*I can leave that job and I don’t have to think about it*”) helped to mitigate identity threats from involvement in activities outside the theatre industry. However, despite attempts at distancing (“*it just pays a wage so I can do my own stuff*”), there was potential for such work to eclipse the more desired identity of creative artist:

“How can I call myself an artist? Actually I’m just a box office assistant who pretends she makes work”

Similarly, as one part-time receptionist commented:

“To most people I meet at parties, I have often felt I cannot introduce myself as an actor because I am not currently professionally employed therefore people will not understand that I really am an actor and not just a ‘want to be’ and that has affected my perception of my status and self”

Taken together, this highlights the fragile nature of creative identities in the context of fringe theatre. The high level of personal investment in the work, highlighted in the previous section, and the strong attachment to the product may exacerbate insecurities as founders sacrifice other areas of their lives and invest high levels of personal resources into the enterprise. Further, the likelihood of failure in this context - the struggles to survive in a competitive industry and the vagaries of audience engagement in and acceptance of the work - create high levels of self-doubt and uncertainty. Therefore, while work may be the context for insecure identities as individuals seek the confirmation of others (Knight and Willmott, 1999) and assemble identities according to organizational discursive regimes (Clarke et al, 2009), the passion and strong attachment that SSTC founders feel for their work may further underscore fragility in terms of a sense of self.

Isolation and Despair

Moving away from contemporary accounts of entrepreneurial passion as positive affect, Linstead and Brewis (2007) highlight the interdependence of passion and suffering and how

passion can “consume, displace, even destroy self” through excessive devotion (Linstead and Brewis, 2007: 352). In the context of fringe theatre, despite the struggles and the sacrifices made, none of the respondents interviewed had seriously considered giving up on their theatrical endeavours. Instead, fear of rejection and the challenges faced led to a compulsive focus on making theatre – *“that drives you to make work...that constant you know, it’s all, all we think about..”*.

This obsessive attachment is despite the routine experience of disappointment as ideas are rejected (*“you can really get involved in the disappointment of not getting something”*) and as theatre work dries up. As one participant commented, highlighting a sense of hopelessness: *“I’ve definitely thought, oh my God will it ever pick up?”*. Another recalled his early days as a theatre maker:

“The absolute despair we all felt at just we had no idea what we were doing, we didn’t know anybody. We didn’t have any money, no money at all”

As the above quote suggests, disappointment and despair were intensified by feelings of isolation in the industry – where the ‘rules of the game’ were unclear (but where networking could be key as an important source of information). This resonates with the organizational context of the SSTC, where individuals and/or groups work alone, often on a project to project and improvisatory basis, with little recognition and where a fragile ‘hold’ on a professional status in the form of continuous employment is insecure. As one performer noted, somewhat gloomily, *“I feel like I’m drowning in a sea of anonymity”*. Others commented on being ‘lost’, on the outside, in the context of a seemingly ruthless industry where routes to employment were often blurred – and where hopes and aspirations could be easily destroyed:

“(There’s a) feeling like there’s things that you don’t know about the industry...with our company at the moment (we are) probably outside of it, trying to get in. We know that there’s certain things you have to do to survive as a company but we don’t know which things we need to do first or how to go about them”.

“I don’t know how that works (getting support) I know people have agents and stuff, I don’t know anything about that...how to get somebody from Sadlers Wells to come to my performance and just say, we’ll book you or get some publicity or get Arts Council stamp on it. I feel like it’s things like that but I’m quite lost as to how to do it...”

For most participants, as has been found in other creative industries (e.g. Umney and Kretos, 2013) there was a struggle between attachment to a creative identity and the commercial imperative involved in producing drama (technical, marketing and production expertise - including, as referred to in the quotes above, knowledge of the industry and the different routes for support). Within fringe, with its focus on experimentalism, discourses of the ‘avant-garde’ were presented as oppositional and of a ‘higher order’ compared with notions of commerciality – where the former was afforded priority and was embedded in identity. As one participant emphatically stated, referring to a desire for creative autonomy free from commercial imperatives:

“What I cannot do at all is adapt to any ideas of what might be more commercial at the moment”.

Participants therefore sought to distance themselves from an entrepreneurial identity and core business practices – though, given their involvement in both the conceptual and operational aspects of the work, these were acknowledged to be necessary to the delivery of the dramatic

endeavour. As others have similarly found (Gill and Pratt, 2008; Umney and Kretsos, 2013), entrepreneurial discourses can be seen to encroach on creative work. Thus, any focus on the commercial was often referred to as ‘*cynical*’ i.e. as disparaging the creative (pure) side of the work. For example, aspirations were often couched in terms of the ability to ‘contract out’ the business side of the enterprise so as to be able to focus exclusively on creativity with time and space released from pressures of administrative work:

“all that (administration) gets in the way when all I want to do develop my work”.

“It’s all the fuff that isn’t clear in the work, it’s the filling in forms, booking rehearsal space, trying to find when people are free, trying to check emails...”

Nevertheless, both creativity and commerciality are intrinsic to entrepreneurialism in this context and comprise worlds that founders must in some form or other inhabit in order to successfully perform their drama idea. The lack of commercial awareness, presented as antithetical to creative artistry and with potential to undermine the passionate attachment to the product, was accordingly a likely contributor to feelings of isolation and despair as founders – ill equipped in a business and commercial sense- sought to negotiate their place in an industry they did not fully understand.

Discussion and Conclusion

This paper set out to explore the emotional dynamics of entrepreneurship through an analysis of UK based small scale independent theatre companies (SSTCs) – in particular how founders draw on emotions of passion in the meanings they attach to their work and how passion may underpin an entrepreneurial identity. In so doing, it has responded to a call for more research on the social construction of entrepreneurial identities (e.g. Fletcher, 2003; Downing, 2005; Johansson, 2004) as well as for a socially constructionist, rather than psychological or cognitive, orientation to the significance of emotions in this context.

While previous work has conceptualised passion as a strong, positive affect that often contributes to entrepreneurial success (e.g. Baron, 2008; Cardon, et al, 2005; Cardon, 2008; Chen et al, 2009), results point to the multiple ways - both positive and negative - in which it can be expressed. In the context of fringe theatre, passion is evident in expressions of deep, often obsessive attachment to the enterprise as well as in the sacrifices (time, resources, social relationships) made. Passion furthermore underscores a strong identification with work – where self is framed in the product which is seen, in turn, as part of a personal journey of self- discovery and experimentation. This dedication and single-minded attachment can create conditions for fragile identities as resources and hopes are heavily invested in one enterprise - in a context characterised by insecurity, where hopes and dreams are unlikely to be realised and where recognition (that might otherwise help to secure a stable sense of self) depends, illusively, on the vagaries of audience approval. Finally, an exclusive identification with creative artistry at the expense of commercial know-how may exacerbate experiences of disappointment, despair and isolation as founders seek a foothold in a crowded and highly competitive industry. Here, the radical roots of fringe’s inheritance mean that theatre making is often seen as oppositional to established commerciality. This antipathy may create conditions for uncertainty and confusion in the struggle to survive in an industry that is both fragmented and unstructured and where there a few avenues for support.

As Goss (2005) argues, emotions of entrepreneurialism, often neglected in the literature, are socially prescribed and context dependent. Results from this study highlight, in a similar manner, the contingent nature of entrepreneurial passion in that its manifestations, in a social constructionist sense, are situationally produced and made intelligible in context. This opens

up potential to see entrepreneurial passion in both positive and negative terms and how in terms of the latter passion can be potentially destructive through sacrifice and obsession as founders seek acceptance of their drama idea against a background of struggle - for personal recognition, for financial support and with the 'system' of dramatic performance. While notions of passion have been recognized in some literature on organizations (e.g. Linstead and Brewis, 2007; Hatcher, 2003) as well as, to a lesser extent, within work on entrepreneurialism (e.g. Cardon et al, 2005; Baron, 2008; Jones and Spicer, 2006), there has been little empirical weight given to a more nuanced understanding of strong feeling or to the dynamics of passion at a socially constructed level.

Finally, the affective base for entrepreneurial identities in this context is grounded in meanings that can be related to passion – which in turn creates fragility in terms of the sense of self. Identities draw on dominant entrepreneurial discourses of creativity to construct 'trail blazing' identities in a context that is, by definition, beyond the mainstream and so convention breaking in its ideal – identities that have purchase at a general level within notions of successful entrepreneurialism (Downing, 2005; Holmquist, 2003; Jones and Spicer, 2006). Passion in the forms of attachment to creative artistry however creates tensions with discourses of commerciality (that prioritise production, planning, marketing and goals), grounded in the rationality tradition. Passion underpins a creative identity whilst, as we have seen, is generative of fragility in terms of a stable sense of self while attachment to creative artistry creates conditions, through the separation outlined above, for feelings of isolation and of being 'lost' in an industry they do not fully apprehend. Passion can therefore be seen to be generative in that it supports and reproduces fragile identities whilst creating the conditions, through obsessive attachment, for potential failure and struggle.

Following from the above, this paper has made several contributions to the field. It has addressed a research gap in the performance and emotions of entrepreneurialism (Goss, 2005) and has given empirical weight to the significance of affectivity in understandings of the construction of identities. More specifically, it has pointed to the dynamics of passion as intrinsic to notions and practices of enterprise. In so doing, it has highlighted the discursive power of emotions in the mobilization of meanings and the manufacture of identities as well as some of the tensions within entrepreneurialism. These dynamics may well translate, albeit in a different form, in other contexts.

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Future of Social Enterprise in Europe – Evidence from an Expert Survey

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Future Of Social Enterprise In Europe – Evidence From An Expert Survey

ABSTRACT

Social enterprises are hybrid organisations operating in the intersection of public sector, non-profit organisations and private businesses. Being boundary spanners between sectors can bring promising opportunities but also tensions and challenges. The focus of research seems to gradually shift away from definitional issues toward more theory-based explanations of the emergence and management of social enterprises, but so far there are hardly any *future-oriented* academic studies on social entrepreneurship. Our aim is to shed light on the role of social enterprises in Europe in the long run. How will their role as a boundary spanner between sectors shape their future, and how is the future of these sectors shaped by social enterprises? We apply the Delphi method to solicit expert opinion of projections on future development in terms of perceived likelihood and desirability. The responses are also grouped and compared according to the background of the experts. Our analyses indicate that there are not many significant differences in perceptions of desirability across countries, while the perceptions of likelihood are very different. The experts are unanimously optimistic about the viability of social enterprise as a hybrid organisation, and social entrepreneurs are even more optimistic than other respondents.

keywords: hybrid organisation, social entrepreneurship, non-profit organisation, Delphi

Introduction

The recent global economic crisis has resulted in economic downturn, a wide array of social problems and in widespread public dissatisfaction with the functioning of the global economic system. Consequently, there has been growing interest in more inclusive and pluralistic economic systems in Europe (European Union, 2014). According to the European Commission the social economy is growing strongly. Traditionally, the European social model has always been characterised by the prominent role played by a variety of organisations that differ both from private corporations and from public institutions. The main purpose is not to generate financial gains for their owners or stakeholders. Their goal is to provide goods and services either to their members or to the community at large (e.g. cooperatives). This European view of a social economy means that goods and services are produced with the explicit and principle aim of benefiting a target community. The definition of social economy covers all activities which can lie in between commercial, profit-oriented activities and non-profit oriented purposes. (Social Europe Guide, 2013; Rhodes & Donnelly-Cox, 2014). The common feature to all these activities is that their purposes are conducted in whole or in part with a social mission. In the EU social economy employs 14.5 million people, corresponding to 6.5 of the workforce (Social Europe Guide, 2013).

The European social enterprise family is incredibly diverse, encompassing a range of organisational and legal forms and statuses. For instance, in the UK 52 per cent of social enterprises derive some incomes from the public sector and 23 per cent describe it as main or only source of income (European Union, 2014a). Whereas social enterprises have played relatively minor role in Nordic countries, which have universalistic welfare model, the government provides extensive public services to all citizens (European Union, 2014b).

The EU is working to strengthen the social economy and the promise of social entrepreneurship has taken a firm place on the policy-makers' agenda (European Commission, 2013), and also academic research on social entrepreneurship is growing rapidly. The focus of research seems to gradually shift away from definitional issues toward more theory-based explanations of the emergence and management of social enterprises, but so far there are hardly

any *future-oriented* academic studies on social entrepreneurship. Our search resulted in only two studies: a Delphi study on opportunities for social enterprise in Germany (Engelke et al., 2015) and a scenario for social enterprise in Europe (Catherall & Richardson, 2014). Our aim is to shed light on the role of social enterprises as hybrid organisations in Europe in the long run. How will their role as a boundary spanner between public, private, and non-profit sectors shape their future, and how is the future of these sectors shaped by social enterprises?

The paper is structured as follows: In the theoretical framework we discuss the nature of hybrid organisations and the key characteristics and trends that may drive the development of traditional sectors towards hybridization, followed by discussion of social enterprises as hybrid organisations. Then a general overview of the Delphi method is followed by description of our research design. The results from the Delphi study are presented and the paper concludes with a discussion of the findings, their limitations and implications.

Theoretical Framework

The formation of organisations to address social problems and create social value has always been an important feature of market economies (Hall 1987, Thompson et al. 2000). An economy is the structure of public institutions, private firms, non-profit organisations, and entrepreneurial activities that distributes scarce resources for the needs of society (Baumol & Blinder, 2008). To be classified as a specific organisational form individual organisations represent characteristics that are identified with a specific category of organisations (Romanelli, 1991).

Organisations in private sector are guided by market forces and their purpose is to generate profit. The profit will be distributed to the shareholders of the enterprise. Organisations in the public sector are guided by the principles of public benefit and collective choice, and public sector organisations get resources through taxation (Billis, 2010). Non-profit organisations surface as a separate organisational form to serve the needs of society that are unmet by public and private sector (Morris et al., 2011). Non-profit organisations have two similarities: they are formed with the intent of fulfilling a social purpose, and they do not distribute revenues as profits (Boris & Steuerle, 2006). The rapid growth of non-profit sector has increased the competition for financial support and volunteers among this kind of organisation forms (Thompson, 2000). There is a growing discussion on the necessity of non-profits to operate in markets and integrate market logics (Cordes & Steuerle, 2008; Cumming, 2008; Kreuzer and Jäger, 2010). In order to keep their activity sustainable and get money for the needs of the beneficiaries non-profit organisations have to integrate market logics into their non-profit activities. Non-profits start to sell their product or services for a market price and reinvest their revenues in their social mission, but their original organisational core, their mission, still remain (Jäger & Schöer, 2013). In other words, when public sector and non-profit organisations start to operate using business operation models, they will turn into hybrid organisation.

Hybrid organisations

Hybridity is always connected to the process or products of a mixture of essentially contradictory and conflicting elements (Branden & Karré, 2011). Oxford English Dictionary (OED 2010) defines that hybrids are the offspring of two different species. Hybrid organisations stand at the crossroads of market, public sector and non-profit organisations. According to Evers (2012) form of hybrid organisation is reached when logics from other sectors have very significant impact on the traditional sector-based identity of an organisation.

Doherty et al. (2014) define hybrid organisational forms “as structures and practises that allow the coexistence of values and artefacts from two or more categories”. Because the essential feature of hybrid organisations is that the logics which they embody are not always compatible, the organisation face heightened challenges when the degree of incompatibility between logics increases (Pache & Santos, 2013).

Hybrid organisations can take various organisational forms, for instance public-private partnerships including logics from public-, private- and non-profit sector. Social enterprises are a classic example of hybrid organisations, because they pursue financial and social aims by combining properties associated with commercial, public and non-profit organisations (Doherty et al. 2014). Also community enterprises are part of wider movement to generate revenue to the pursuit of social goals. Community enterprises have their roots in non-profit and public sector, and they act in the public interest but independently (Diamond, 1996). Community enterprises reinvest profits in the business or the community. However, according to Tracey et al. (2005) these two organisation forms are not similar; community enterprises have strong local linkages and the membership of community normally includes the residents of a defined local community. Community enterprises also are multifunctional organisations which are responsible for a variety of local initiatives (Tracey et al. 2005).

Social enterprise as hybrid organisation

From the historical point of view, the meaning of social enterprise has changed over the time (Teasdale, 2012). According to Kerlin 2010 and Peattie & Morley, 2008 social enterprise is a product of the evolutionary development of non-profit and voluntary organisations; non-profits got the idea to generate commercial revenue as a way to replace the lack of government funds. Some authors (Reis, 1999; Thompson, 2002) define that social entrepreneurship just refers to the phenomenon of applying business expertise and market-based skills in the public or non-profit sector. On the other hand, profit organisations can develop services specifically designed to meet social needs (Drayton, 2002). Alternatively, social entrepreneurship can be defined in a broader way, referring to any innovative, social value-creating activity that can occur within or across the non-profit, business and government sectors (Austin et al., 2006, Fornoni et al., 2010).

Based on these previous definitions, social enterprise as an organisational form is hybrid organisation operating in the intersection of public sector, non-profit organisations and private businesses (see Figure 1). Acting between different sectors can bring promising opportunities but also tensions and challenges (Defourny & Nyssens, 2010; Doherty, Haugh & Lyon, 2014). The logic of engaging in innovative, risk-taking, proactive and profit targeted behaviours while also attempting to serve a social mission and satisfy multiple stakeholders, with limited resources, is not yet always explicit subject (Morris et al., 2007). Social enterprises face also a variety of competing institutional pressures. The institutional complexity appears especially because for-profit and non-profit institutional logics may be in conflict with one another (Dacin et al., 2011). Also Pache and Santos (2010) argued that social enterprises face conflicting institutional demands arising from the dual logics embedded in different environments they operate. The pursuit of dual mission of hybrid organisation can lead to mission drift where the social mission of social enterprise is sacrificed to achieve financial sustainability (Carroll and Stater, 2009; Brandsen and Karré, 2011; Eikenberry and Kluver, 2004; Doherty et al. 2014) because social enterprises generate less profit than they might create if they will act fully commercial (VanSandt et al. 2009)

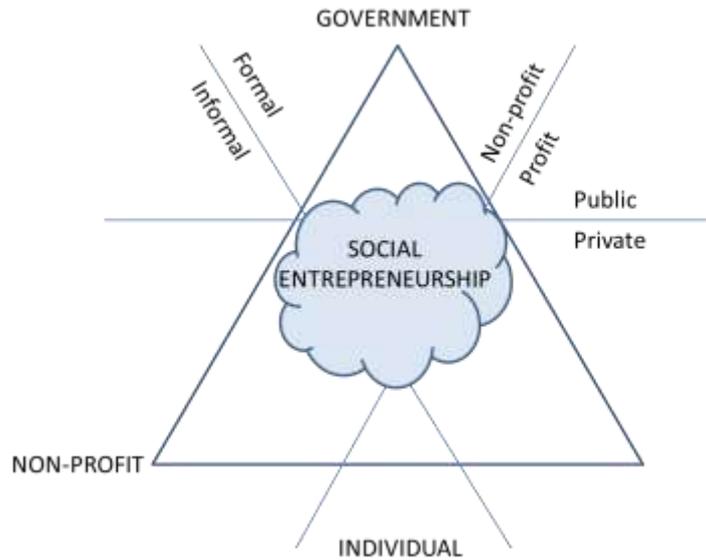


Figure 1. Social enterprises and societal triangle (adapted from Brandsen and Karré, 2011)

Research Method

Delphi method

To analyse the future role of social entrepreneurship in Europe, we apply the Delphi method. Delphi is commonly applied in future-oriented research, and traditionally involves an anonymous survey using questionnaires with controlled feedback to allow iteration within a panel of experts (Linstone & Turoff, 2011). It is generally considered to be suitable for studies that lack historical data and require the collection of expert opinions (Rowe & Wright, 2011). The choice of specific methodological characteristics of a Delphi process is dependent on the research question and can vary substantially across studies (Hasson & Keeney, 2011). A Delphi study can e.g. involve only few or many rounds of data collection, and flexibly combine quantitative and qualitative information (Tapio et al., 2011).

Although achieving consensus among the experts is often the goal of the Delphi process, this was not our objective due to the contextuality of the phenomenon of social entrepreneurship (Kerlin, 2010) and also because the general idea of consensus as an approximation of truth in Delphi studies has been questioned (Landeta, 2005).

The panel composition is often mentioned as the key characteristic determining the validity of a Delphi study (Tichy, 2004; Hussler et al, 2011), highlighting the importance of the selection of experts to be involved.

In related domains, Delphi has recently been applied for social impact appraisal (Ribeiro & Quintanilla, 2015) and evaluation of social enterprise opportunities (Engelke et al., 2015).

Sampling and data collection

We initially contacted the experts based on participation in a European level seminar of social entrepreneurship. The seminar took place in Finland and was targeted at policy makers, academics, social entrepreneurs, and representatives of governments and non-profits interested in social entrepreneurship. There were about 80 participants in the seminar, and they were all

invited to respond to the survey and to disseminate the link to other experts (snowball sampling).

We designed and pre-tested a web-based questionnaire including 15 projections of future development. The wording of the projections is shown in Table 1. The expert panellists were asked to evaluate the likelihood and desirability of these development projections. In addition there were a number of open questions of the growth potential and role of social entrepreneurship in 2025.

The first survey round yielded 45 completed usable responses, mainly from Finland and Sweden (56%) and the UK (21%). 23% came from other European countries (including Spain, Poland, Italy, Luxemburg, Estonia, and Latvia). 36% of the respondents were social entrepreneurs and 64% others, including experts in public sector (18%), researchers (18%), and policy makers (9%), see Figure 2. The respondents' experience in SE varied between one year and over thirty years. About 43% had less than five years of experience, 26% between 5-10 years and 31% more than ten years. The most often mentioned areas of interest were health and social care (10), impact measurement (11), environment & sustainability (11), and scaling (7).

50% of the first round respondents agreed to participate in the next Delphi data collection round. They were provided a summary of the first round results along with a link to the second round questionnaire, which was a shortened version concentrating more specifically on open questions about the role of social entrepreneurship in relation to private, public and non-profit sectors. The second round yielded only 8 responses, but they came from three different countries, and academics, social entrepreneurs and public sector experts were all represented. Thus we believe that the composition of our panel is heterogeneous enough to cover expertise from different points of view.

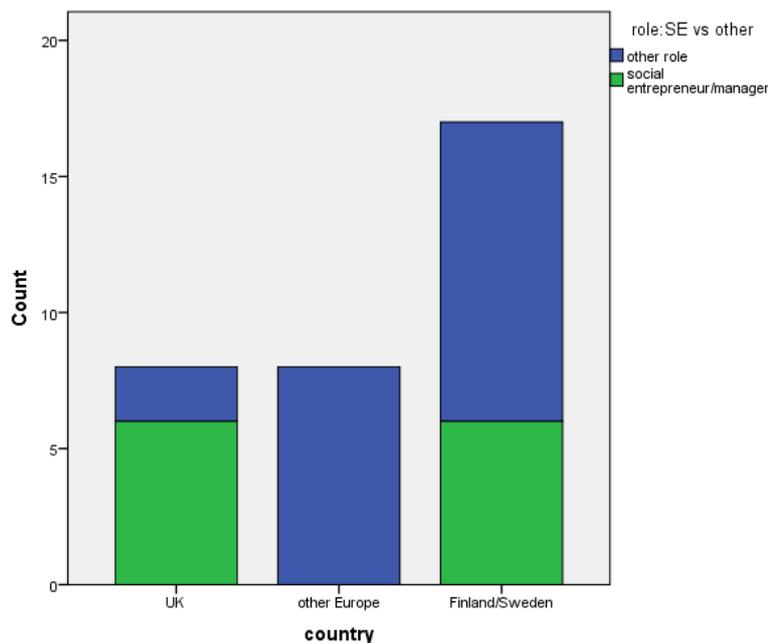


Figure 2. First round respondents by country and role

Results

The first survey round included 15 specific projection items related to the future development of social enterprises as hybrid organisations, and their relationship to the three traditional sectors. The respondents were asked to evaluate each projection first in terms of

desirability on a scale from 1= highly undesirable to 5= highly desirable, and then in terms of likelihood that the projection would come true by the year 2025 on a scale from 1=highly unlikely to 5= almost sure to happen. In the second round, the respondents received feedback of the first round results and were asked to identify especially threatening and utopistic developments, where there would be a large discrepancy between desirability and likelihood.

Table 1. shows the average desirability and likelihood of each projection. The first five items are related to the relationship of social enterprises to the business sector, followed by four items about the relationship to the public sector and three items dealing with the non-profit sector. Finally, three projections dealt with the overall viability and legitimacy of social enterprises.

Table 1. Desirability and likelihood of projections

Projection	Desirability		Likelihood	
	Mean	S.D.	Mean	S.D.
SE will boost entrepreneurship in general as motives for entrepreneurship are changing	4.29	.938	3.59	1.104
SE as a phenomenon will disappear as it becomes “business as usual”	2.68	1.512	1.88	.946
SEs will be increasingly part of value networks with mainstream businesses	3.67	.990	3.42	.792
Increasingly SEs will be driven by private profit motivations	1.71	.970	2.68	.912
Commercial SMEs will be displaced because of SEs	2.18	1.286	2.18	1.103
SE as a phenomenon will disappear as it becomes “government as usual”	2.26	1.238	2.12	.913
The role of public sector as a service producer will decrease because of SE	3.06	1.127	3.03	.870
Most SEs will fail unless subsidized by government	1.48	.712	2.48	1.004
Typically SEs will be heavily subsidized by government	1.55	.869	2.15	1.121
The role of traditional non-profits/ NGOs will decrease because of SE	2.61	1.059	2.64	.783
Organisational sustainability will be possible for SEs without commercial viability	2.33	1.384	1.85	.906
Civil society organisations will be displaced because of SEs	1.82	1.014	2.09	.947
SE as a phenomenon will disappear as it is not viable in the long run	1.50	1.022	1.76	1.017
SE will be recognized as a specific company legal form by most OECD countries	3.81	1.061	3.47	1.016
Many SEs will succeed or fail on the basis of whether they effectively communicate their impact	3.12	1.244	3.58	.902

We also examine the differences in responses by country and background: Table 2 shows those projections where the average desirability or likelihood differed significantly across countries (using One-way ANOVA and F-test, $p < .05$), and Table 3 shows the projections where the responses of social entrepreneurs were significantly different from those of other experts employed in academia, public or non-profit sectors (independent samples t-test, $p < .05$)

Table 2. Differences in projections by country

Projection	Desirability mean			Likelihood mean		
	UK	Other	Sca	UK	Other	Sca
SE as a phenomenon will disappear as it becomes “government as usual”	1.25	1.44	3.06*	2.25	2.11	2.00
The role of traditional non-profits/ NGOs will decrease because of SE	3.00*	3.11*	2.06	3.00	2.22	2.69
SEs will be increasingly part of value networks with mainstream businesses	3.71	3.44	3.69	4.00*	2.78	3.50
Many SEs will succeed or fail on the basis of whether they effectively communicate their impact	3.57	3.00	2.94	4.14*	3.11	3.50
Organisational sustainability will be possible for SEs without commercial viability	1.75	2.56	2.60	1.13	2.22*	2.07*
Most SEs will fail unless subsidized by government	1.13	1.88	1.50	1.75	3.25*	2.50
Typically SEs will be heavily subsidized by government	1.00	1.89*	1.60*	1.63	3.22*	1.80
Commercial SMEs will be displaced because of SEs	1.88	1.67	2.60	1.38	1.78	2.80*

*the mean value for this country is significantly higher than the mean value for other countries at $p < .05$

Table 3. Differences in means of projections by background

Projection	Desirability mean		Likelihood mean	
	Other	SE	Other	SE
SE as a phenomenon will disappear as it becomes “government as usual”	2.15	2.25	1.75	2.50*
SEs will be increasingly part of value networks with mainstream businesses	3.6	3.73	3.20	3.82*
Many SEs will succeed or fail on the basis of whether they effectively communicate their impact	3.1	3.18	3.20	4.09*
Most SEs will fail unless subsidized by government	1.55	1.42	2.85*	1.92
Typically SEs will be heavily subsidized by government	1.68	1.25	2.42*	1.58

*the mean value for social entrepreneurs is significantly higher than the mean value for other respondents at $p < .05$

Private sector and social enterprises

On an average, the experts have strong hopes that social entrepreneurship would boost entrepreneurship in general and tend to believe that the motives of entrepreneurship are changing towards the creation of social value. It is also considered rather desirable and likely that social enterprises will increasingly be a part of value networks collaborating with commercially motivated private businesses. The respondents from UK and social entrepreneurs find this even more likely than other Europeans or academics and public or non-profit sector experts, see Tables 2 and 3.

“Mission drift”, where social enterprises would become increasingly motivated by economic profit is seen as highly undesirable, but not so unlikely development. In the open comments, one expert saw this as a major threat described as follows:

“Purely private business will respond to demand whenever there is purchasing power. Social entrepreneurship will replace public services in cases where there is not enough market demand. Thus markets will be split into small scale social entrepreneurship supported by government and successful businesses depending on the customers. When social enterprises become successful they lose their social mission and become businesses that seek economic profit.”

It is considered unlikely that social enterprises would lose their distinct identity and become integrated into the private business sector. Although the experts find it somewhat desirable that mainstream businesses would become closer to social enterprises, it is not considered to happen in larger scale, and social enterprises are not seen to displace mainstream businesses. Only Scandinavian respondents believed that this might happen, while the other Europeans considered it unlikely (see Table 2). One expert described a utopistic development scenario as follows:

“Social entrepreneurship creates a new competitive way of doing business, which largely shapes the existing business structures towards a more socially sustainable way.”

Another expert pointed to the need for unique identity but found it unlikely to happen:

“SE's are better able to articulate their purpose and value and differentiate themselves from other business models”,

A social entrepreneur commented as a major threat:

“SE characteristics, language (and tax benefits) are being increasingly sought by commercial companies as they (often) pretend to also be focussed on social outcomes rather than profit generation for external shareholders”.

When asked, which actors are more likely to enter into the social entrepreneurship sphere or to take a stronger role in the future development, large companies were considered to be of minor importance currently and not to increase their role very much in the future either, see Table 4. In contrast, small and medium-sized companies are expected to become highly important in the future.

Table 4. Importance of sectors in shaping social entrepreneurship (1=not important, 5=extremely important)

Sector	Currently		In the future	
	Mean	S. D.	Mean	S. D.
Large companies	2.00	.894	2.67	1.033
Small and medium-sized companies	3.17	.983	3.67	1.033
EU, OECD or other transnational public organisations	2.33	1.211	2.83	.983
National governments	2.33	.816	3.50	1.049
Local authorities (cities, municipalities)	2.83	.983	4.33	.816
Charities, associations and other non-profits	3.67	1.033	4.33	.516
Citizens as consumers	2.67	1.033	3.67	1.033
Citizens as social entrepreneurs	2.67	.516	3.67	.816

Public sector and social enterprises

The projection about social enterprises entering more strongly into the public service provision received moderate support from the respondents regardless of their background. The average values for both desirability and likelihood were close to the midpoint of the scale. Social entrepreneurship is not, however, generally seen to become “government as usual”, i.e. public sector will not adopt the institutional logic of social enterprises to the extent that social entrepreneurship as a distinct phenomenon would disappear. This projection was nevertheless perceived as rather desirable by the Scandinavian respondents while others found it highly undesirable (Table 2).

The respondents felt strongly that governments should not heavily subsidize social enterprises, and that the latter should be able to succeed without government subsidies. The likelihood of failure in the absence of subsidization was also perceived to be relatively low. There were some differences across countries, as the UK respondents had clearly the most negative attitudes towards subsidization, followed by Scandinavians while respondents from other Europe were least negative. The other Europeans actually predicted that extensive government subsidization will be quite likely, and necessary for most social enterprises to survive (Table 2). Social entrepreneurs saw subsidization to be less probable than did the other respondents (Table 3).

The respondents’ comments about the relationship to public sector dealt mostly with procurement and outsourcing of welfare services. The threatening trends for social enterprises included the inability of smaller social enterprises to compete for public sector contracts. The reasons for this were elaborated as follows:

“Financial pressures will limit smaller SE's to meet tender requirements regarding provision of capital and risk absorption”.

“Economies of scale by large companies combined with growing emphasis on price in public sector procurement”

On the other hand, as most desirable but highly unlikely (utopistic) development scenarios were mentioned by two experts:

“Public sector procurement people understanding the real added value of contracting with SEs”.

“Social enterprise is a partner of choice when public sector outsources welfare services”

In shaping the social entrepreneurship landscape, there are differences in importance of the various levels of government: while local authorities are perceived moderately important currently, their role in the future is perceived as utmost important by our respondents. Meanwhile, the national and transnational governments are considered to be of minor importance now and moderately so in the future (Table 4). The main drivers for the increased role of local government according to the experts were mainly financial:

“The need for public services to reduce cost and become more accountable at a local level”.

“The desire to use markets in social services, as the hard international competition is decreasing the possibilities of the government to operate on taxpayers money in many fields”.

Non-profit sector and social enterprises

The projection about the role of traditional non-profits/ NGOs decreasing because of social enterprises was seen rather desirable by experts outside Scandinavia, but Scandinavians on an average deemed it somewhat undesirable and also not very likely to happen (Table 2). In the UK, respondents found it rather likely to happen, and in other Europe not likely. Social entrepreneurship resulting in any displacement of the civil society organisations was rather unanimously deemed highly undesirable and also not likely to happen during the next decade.

When asked about the current and future importance of various sectors and stakeholders in the development of social entrepreneurship, the non-profit sector stood out as most important now and in the future (see Table 4). Also the role of citizens as both consumers and entrepreneurs is seen to increase substantially. The open comments of the experts illustrate this:

“Like fair Trade, Social Buying and SEs will create a growing ethical (but probably still niche) market”.

“Consumer behavior and expectations by employees and stakeholders are promoting the development of SE”

“Due the global economy national governments are losing power. People wake-up to start thinking about better life with their own power”.

Viability and legitimacy of social enterprise as a hybrid organisation

In general, the experts were highly and unanimously optimistic about the future viability of social entrepreneurship. The viability was considered to largely depend on the ability to measure and communicate the social impact. This was especially highlighted in the responses of social entrepreneurs and those from the UK (Tables 1 and 2).

Many considered social enterprises should be seen as a legitimate and distinct fourth sector of the society. They believed that it should and likely will be institutionalized as a legal form of enterprise in most OECD countries within the next decade. Several experts mentioned current legislation related to the organisational forms as problematic. In Finland, the law of work integration social enterprises is seen to confuse people about the nature of social enterprises. In other countries like UK, Spain and Italy some respondents felt that non-profit or charity legislations are too restrictive, not allowing for economic activity to the extent necessary for social enterprises.

“Social enterprises are viewed as an addition to businesses or non-profits instead of being treated as a new sector of economy, there are no legal frameworks for hybrid companies.”

“Utopia: social entrepreneurship has started taking over business-as-usual - changing the way we do business from profit motivated to socially motivated. Realistically: it is a 'fourth sector' between public, private and civil society where motives and goals blend in interesting ways. It will continue to pose questions and challenging alternatives to existing public and private modus operandi.”

While some experts saw social enterprise as a fourth sector, clearly distinct from the traditional sectors, others predicted that increased hybridization will further blur the boundaries of the sectors, making it difficult to establish legislation and legitimacy.

“The field becomes more blurry, it becomes more difficult to distinguish the sectors in legislation. Pure business will be emphasized whenever there exists market demand”.

“The financial pressures from austerity may encourage hybridization but this could marginalise the distinguishing competencies of the social enterprise business model. Hybrids between public and third sectors may be more obvious”.

Even though the experts were unanimously optimistic about the viability, there was a lot of variation in the opinions regarding the place of social enterprise between the sectors.

“We have always considered that the social entrepreneurship offer is the 'Best of Both' - the best of what public service does using the best skills of the private sector to create better outcomes. The 'penny will drop' with more interest in this solution over time”.

“Social enterprises will continue to deliver services and innovate with a wider participation of citizens, which will become more economically and politically engaged. Some parts of the private sector will collaborate ad hoc with social enterprises but the majority may strongly argue that providing support to social entrepreneurship goes against the rules”.

“The risk is that social enterprises become a neoliberal tool for further dismantling of the welfare state. A policy like that would greatly harm the public opinion of social enterprises. They should be developed as an alternative to traditional corporations, not an alternative to the welfare state.”

Conclusion

Social enterprise is a phenomenon which has both practical and theoretical significance. There has been growing interest in this hybrid organisation form among scholars, policy makers and practitioners in Europe. Nordic countries have a good welfare model, thus to this day there has been very little space or need for developing new types of activities. But according to our results, social enterprises are expected to combine business skills of private sector with social aims of the public sector; especially social enterprises could play an important role in public health care sector.

Although the social enterprise concept is clearly defined, maybe policy makers do not have enough information on social enterprise, and therefore the legislation still has a lot of potential to improve.

It is considered unlikely that social enterprises would lose their distinct identity and become integrated into the private business sector. Although the experts find it somewhat desirable that mainstream businesses would become closer to social enterprises, it is not considered to happen in larger scale, and social enterprises are not seen to displace mainstream businesses. Nor are they likely to substantially decrease the role of non-profits in the society, although the non-profit sector is seen to be the central actor in the development of social entrepreneurship. According to the study, the overall conclusion is that social enterprises continue to be a heterogeneous group of hybrid organisations, spanning and blurring the boundaries of traditional sectors in innovative ways.

The results also highlight the contextual nature of the phenomenon. The roles of traditional sectors have developed over different trajectories in different parts of Europe and thus the role of social entrepreneurship in relation to these sectors is also hard to generalize across Europe. Our study showed some interesting differences between the opinions of experts from different countries, e.g. the UK respondents tended to see social enterprise moving more towards the private sector, away from the dependence of public contracts.

Our study is not without limitations and thus provides interesting avenues for future research. In terms of research methodology, the unanimous optimism about the viability of social enterprises raises the question whether the selection of experts through seminar participation and snowball sampling has produced a panel with excessively positive attitude and critical opinions are under-represented in our study. Furthermore, the low response rate at the second round may diminish the reliability of the results.

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**Procurement Of Non-Incremental Sustainable Technology Innovations:
Entrepreneurial Firms Supplying The New Zealand Construction Industry.**

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Procurement Of Non-Incremental Sustainable Technology Innovations Entrepreneurial Firms Supplying The New Zealand Construction Industry.

Abstract

Traditionally construction industries in New Zealand and abroad have a low track record for successful sustainable innovations. This has a negative impact on private and government spending, and on quality, society and the environment. This conceptual paper posits that the construction industry needs non-incremental (i.e. architectural, system, radical, modular) sustainable technology innovations to make drastic improvements. Such innovations often come from entrepreneurial (small) firms from other industries or at the beginning of supply chains and must be procured and adopted further into such chains. However, after an extensive literature review it remains unclear how entrepreneurial firms procure non-incremental sustainable technology innovations for the construction industry. The paper focuses on procurement activities of entrepreneurial firms in the New Zealand context. These activities interact with (internal and external) innovation activities for an optimal firm performance. They are affected by clusters of internal and external variables.

The paper discusses extant literature, a conceptual framework, main propositions, research aims and the choice for a focus group method. It is part of a doctoral project.

Key words

Construction & building industry; entrepreneurs / small firms; New Zealand; non-incremental technology innovations; procurement; sustainability.

Introduction

Traditionally the construction industry in New Zealand and abroad has a low productivity and a low track record for successful innovations (Fairweather, 2010). The industry also lags in sustainability performance (e.g. NZGBC, 2013; BRANZ 2014, p. 20) when seen from a broader or lifecycle perspective. This has a negative impact on private and government spending, on quality and health/wellbeing, and on the environment. Nevertheless the industry is an important contributor to the New Zealand economy (Page, 2013).

In line with Kibert & Grosskopf (2005), Schaltegger & Wagner (2008) and Van den Dobbelsteen (2004) this proposal posits that the construction industry needs non-incremental (disruptive or discontinuous, i.e. modular, architectural, system or radical) sustainable technology innovations to make drastic improvements in sustainability. Such innovations are often procured and (co-) developed by entrepreneurial firms thus introducing such innovations to the innovation superstructure (e.g. Winch, 1998; Hardie, 2011) and hence further into the construction industry. *However it is unclear how entrepreneurial firms procure non-incremental sustainable technology innovations for the construction industry.*

Figure 1 shows a construction supply chain (Pryke, 2009, p. 2). The smaller dashed oval indicates the primary research area; the larger dashed oval the wider research area. The 2nd tier suppliers which are the focus of this research often have no direct client contacts. These include *trade contractors* (e.g. plumbers, carpenters); *component suppliers* (supplying systems as window facades or other off-site manufactured structures); *material or trade suppliers* (supplying commodities as bricks, nails, cladding material); and *specialist services or others* (supplying secondary material as machineries, tools, or a range of specialist services).

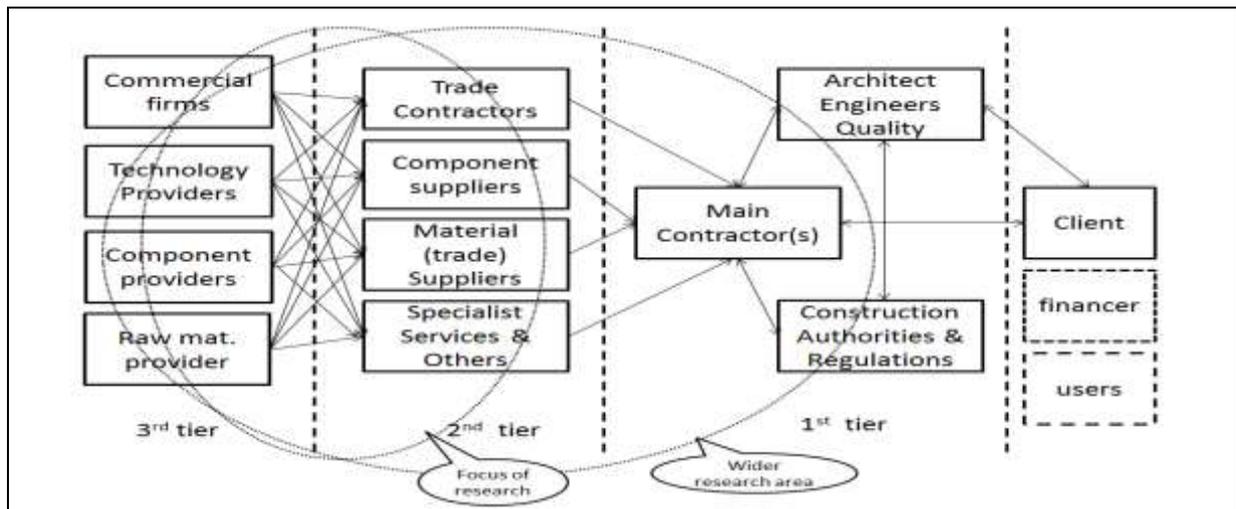


Figure 6: Actors in a construction supply chain (based on Pryke, 2009 and Van Weele, 2010)

The 3rd tier suppliers can offer a variety of goods and services (Van Weele, 2010, p. 15). This research distinguishes *commercial firms* supplying ready-to-sell tangible innovative products (e.g. machinery or materials) with know-how; *technology providers* supplying intangible products (competencies/skills or technology know-how); *component providers* supplying tangible innovative (semi-manufactured) products and know-how that must be transformed (processed or built) into a product offering; and *raw material providers*. The financer and users are considered less important for this research.

Literature review

Small firms are not miniature versions of large firms (e.g. Torrès & Julien, 2005) and small firm innovation and procurement processes will differ from those of larger firms. Processes are likely to be more informal, simplistic and holistic, and centred round the firm-owner, although Meijaard *et al.* (2005) suggested a wider variety of organisational small firm structures including formal and complex structures.

There is a wealth of literature on how large organisations procure goods and services but it remains unclear how small firms procure these (e.g. Hagelaar *et al.*, 2014; Paik, 2009). Often (small) entrepreneurial firms from outside the industry or at the beginning of supply chains play an important role in introducing innovations to the industry (e.g. Baumol, 2002; Farschi, 2011; Johnsen & Philips, 2011; Gambatese & Hallowell, 2011; OECD, 2005, 2010; Pries, 1995, 2005). There is literature on how small firms successfully diffuse non-incremental sustainable innovations in the construction industry (e.g. Hardie, 2011, 2013; Sheffer & Levitt, 2010, 2013), but this literature does not reveal (e.g. Hardie 2011, p. 260) supplier relationships of such firms. Likewise, there is a growing body of literature (e.g. Johnsen *et al.*, 2011; Philips *et al.*, 2004) on how large organisations procure non-incremental innovations.

The concept of open innovation “the use of purposive inflows and outflows of knowledge to accelerate internal innovation and to expand the markets for external use of innovation, respectively” (Chesbrough, 2004) is increasingly being used in small firms (Pullen, 2010; Van de Vrande 2009), but its use in construction is unknown. There is research on innovation types in the construction industry (Slaughter, 2000 Hardie, *ibid*). Literature also suggests (e.g. Hardie, 2011, Sheffer & Levitt, 2010) several barriers to adoption of such innovations on a meso (industry) level and on a macro (systemic) level in the construction industry. But as Utterback (1994) concluded, these (in-frequent) non-incremental innovations will trigger

(more frequent) process and incremental innovations, and hence will deliver large benefits to stakeholders.

Entrepreneurial (small) firms are a subset of small firms but realize substantial growth and renewal (OECD, 2010). Owners will have a pivotal role (Burns, 2011) and often act as gatekeepers or ambassadors (North & Smallbone, 2000). Their innovation and procurement activities are determined by their experience and attitude to innovation (Chandler, *et al.*, 2000; Songip *et al.*, 2013) by their holistic approach to procurement (Quayle, 2002; Pressey *et al.*, 2009) and hence by their perceptions on risks, strategies and objectives. Altruistic (social and environmental) motives of firm owners could play a role in the choice of wanting to offer sustainable innovations. However it is expected that entrepreneurs are pursuing opportunities (Zortea *et al.*, 2013) and that business objectives (growth, profits, or even continuity) are more important drivers. This is in line with research of Hardy *et al.* (2013, p. 186) on environmental innovative small firms who found that the drivers regulatory climate, industry networks, project-based conditions and client and user influence all ranked substantially higher than the owners' personal motivation.

Definition on procurement

Managing the firm's external resources in such a way that the supply of goods, services, capabilities and knowledge (including acquiring or getting access to innovations) *in exchange for financial means* is secured at the most favourable conditions. (Based on Van Weele, 2010).

Definitions on innovation

For this research four definitions on innovations are relevant:

1. A *technological product innovation* is the implementation and commercialisation of a product with improved characteristics such as to deliver objectively new or improved services to the customer (OECD, 2005).
2. Innovation is the process through which firms seek to *acquire* and *build upon* their distinctive technological competence, understood as the set of resources a firm possesses and the way in which these are transformed by innovative capabilities (Tidd & Bessant, 2009).
3. Innovation is the *tool of entrepreneurs*, the means by which they exploit change as an opportunity for a different business or service (Drucker, 1985).
4. Innovation is the actual use of *nontrivial change and improvement* in a process, product or system that is *novel to the developing organisation[s]*, [...] and can be *associated with market growth* [...] and *reductions in the cost* of production (Slaughter, 2000).

Mlecnik (2013, p. 106) adopted the Slaughter (2000) taxonomy in his research on 2nd tier suppliers on construction innovation. His research found that innovative suppliers have a broader vision on innovation and use a wide network in the construction chain. They can e.g. start with what seems an incremental innovation but through collaboration with other players this can become a non-incremental innovation (Mlecnik, 2013, p. 109). Slaughter (*ibid*) saw a relationship between the types of innovation and supplier involvement. This was also found by Wynstra & Pierick (2000).

New Zealand entrepreneurial firms – the unit of analysis

This research focuses on entrepreneurial firms (probably between 6 – 150 employees) in which separated innovation and procurement activities can be discerned. These firms supply goods and services into the construction industry. In New Zealand only 10% of all firms (MBIE, 2014) and 8% of construction firms (Page, 2013, p. 16) have more than 5 employees. Moreover

only a minority of such firms will have a sustained entrepreneurial orientation *and* create substantial growth. From a quantitative international comparison of entrepreneurship and performance Frederik & Monsen (2011; p. 202) concluded that “current Kiwi *entrepreneurial disequilibrium* of high entrepreneurial activity but lower economic development comes from a singular constellations of events that disfavour *creative destruction* in the Schumpeterian sense” (original italics from the authors). They found that that several macro factors (e.g. lack of adequate governmental interventions) hindered the creation of wealth from entrepreneurial activities. Deakins cited a 2008 New Zealand treasury report stating that competitive forces are generally relatively low due to the size of the domestic market (Deakins, 2013, p. 3). Following the reasoning of Schumpeter (1942) this would imply low innovation or improvement rates. This apparently low level of competitive forces however would contradict general opinion that at least 2nd tier construction firms experience fierce competition on lowest-price contracts (e.g. Hinton, 2012, Bemelmans, 2012). When analysing 2010 New Zealand Statistics data Deakins concluded that a lack of investment in business R&D hindered adoption of innovations. Rinne & Fairweather (2011, p. 77) concluded that cultural attitudes like the tully-poppy-syndrome, individualism and a focus on lifestyle can limit implementation of innovations. An international OECD study (2010 p. 24) found that *high-growth enterprises* account for 2 to 8% of the total firm population. Considering the above this percentage will be lower in the New Zealand construction context.

For defining entrepreneurs the OECD (2010, p. 33) proposed the following definition: “Entrepreneurs are those persons (business owners) who seek to generate value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets.” Shane (2003, as cited in Hardie, 2011, p. 29) linked entrepreneurship to innovation and defined this as an activity that “involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services as not previously achieved”. Entrepreneurship will include characteristics of *pro-active to innovation and risk, competitive aggressiveness, autonomy opportunity recognition, growth ambitions, and organisational learning* (based on Zortea, 2012, p. 147-148) to which this research adds *a longer-term vision on how to achieve growth* (e.g. Burns, 2001). Entrepreneurial orientation can be measured on a scale as e.g. developed by Covin & Slevin (1989, cited in Verreynne *et al.*, 2014).

This research excludes firms with less than 6 employees as such firms probably have too simplistic structures (Meijaard *et al.*, 2005). In their research on small firm strategy among New Zealand firms Verreynne *et al.* (2014, p. 8) excluded firms with less than 10 employees “in order to allow for meaningful [employee] participation”. This research also excludes firms with more than 150 employees as (a) in the New Zealand context they will probably behave as mature and large firms, and (b) the theory of innovation and procurement activities for such firms has already been developed. In their research Verreynne *et al.* (2014, p. 8) excluded firms with more than 100 employees. Although Koebel & Cavell (2006) concluded otherwise it is expected that such larger firms have a less distinct entrepreneurial and innovative approach (see also Verreynne & Meyer, 2010). This is supported by an OECD report (2010, p. 16) that found that small firms are more active than large firms in “breakthrough innovations [...] not just as knowledge exploiters but also as knowledge sources”.

Technology

A well-established means to protect technology innovations is using patents and other forms of intellectual property such as trade secrets, copyrights, brands, trademarks or database protection (Jell, 2011). Holgesson (2012) found that small entrepreneurial firms use patents to attract financial means and customers and less for protection. In the New Zealand context Deakins (2013) found that patenting can be a good albeit expensive and imperfect strategy for

small innovative firms. In their research Manley (2008) and Hardie (2011) found that a large part of innovative construction small firms (subcontractors and manufacturers) use patents as a means of protecting their technology innovations. (In a survey among innovative small firms Hardie (2011) found that 67% of innovations had been patented). Koebel (2008, p. 47) saw patenting relevant for (3rd and 2nd tier) manufacturing and supplying firms but not for innovative home builders as they could not extract value from their suppliers' patents. Brochner (2013) concluded that patents are relevant for small construction service firms in industry-university R&D interactions and for their intellectual property strategies.

A search in the online database Espacenet⁸⁷ revealed 300 international construction patents from New Zealand organisations, and 700 New Zealand construction patents from foreign organisations. Circa 10% were related to systems and processes and not to discrete devices on a product level. Espacenet indicated that at least 45 of these patents were related to climate change. Not all patents will be legally valid or commercially relevant but all will need complementary assets (e.g. Burgelman *et al.*, 2009, p. 33). An analysis in advanced databases will reveal relevant trends and also potential case study firms.

Networks and collaboration

It must be noted that technology protection is not the only strategy that entrepreneurial firms use (see e.g. James *et al.*, 2013) although the above discussion shows it can be an important one. Entrepreneurial firms will also use their networks in industry and downstream with (potential) customers to create a sustainable value proposition (Gambatese, 2011, p. 508; Treacy & Wiersema, 1997). Similarly, firms can use marketing strategies such as early-time-to-market or joint innovation strategies with customers (Fairweather, 2010) to gain a competitive advantage. In all these instances upstream and downstream networking and collaboration capacities are often crucial (e.g. Chesbrough, 2004; Gronum *et al.*, 2012; De Jong, 2005).

Gap in extant research

The literature reveals *a lack of knowledge on how entrepreneurial firms procure non-incremental sustainable technology innovations for the construction industry*. In more detail it is unclear:

1. How such firms procure non-incremental sustainable technology innovations.
2. How procurement and innovation activities interact within such firms when procuring said innovations.
3. How such firms use their internal variables (characteristics) in managing these interactions.
4. How such firms react (deal with) or use external variables in managing these interactions.
5. What the procurement performance is as a result of these interactions.
6. What the innovation performance is as a result of these interactions.
7. What the ultimate firm performance is as a result of these interactions.

Conceptual framework

The paper now continues with describing a conceptual framework (Figure 2). The framework shows two (dependant) constructs of interacting procurement activities (1a) and (internal and external) innovation activities (1b) of the entrepreneurial New Zealand firm. These procurement activities and innovation activities will lead to (interdependent) procurement

⁸⁷ www.espacenet.com. Preliminary patent search in IPC-class E04, with NZ priorities or Non-NZ priorities. (Data extracted 20 May 2013). A detailed search will be conducted in advanced databases. See Brochner (2013 p. 415, p. 417) for IP classes and US classes. Espacenet uses classes Y02 and Y04 for 'climate change' patents.

performance (5a) and innovation performance (5b). The resulting entrepreneurial firm performance (6) is the dependant construct. These constructs are affected by five (extraneous) constructs which describe the firm’s macro (2a) and meso (2b) environment, the characteristics of the innovation (3), the characteristics of the owner and the entrepreneurial firm (4a), and the firm’s strategy and business model (4b). The dotted squares around some constructs indicate possible relationships that will be tested early in the empirical research. These relationships follow reasoning of the holistic and integrated nature of the firm and thinking of the entrepreneur (Hagelaar *et al.*, 2014). However, as this research wants to examine the interaction between procurement (1a) and innovation (1b) activities and the effects of several extraneous variables, it à priori wants to separate them. Furthermore, as this research wants to determine value-adding procurement activities, it also wants to distinguish the performance types (5a, 5a, 6). Related variables and propositions are described later-on).

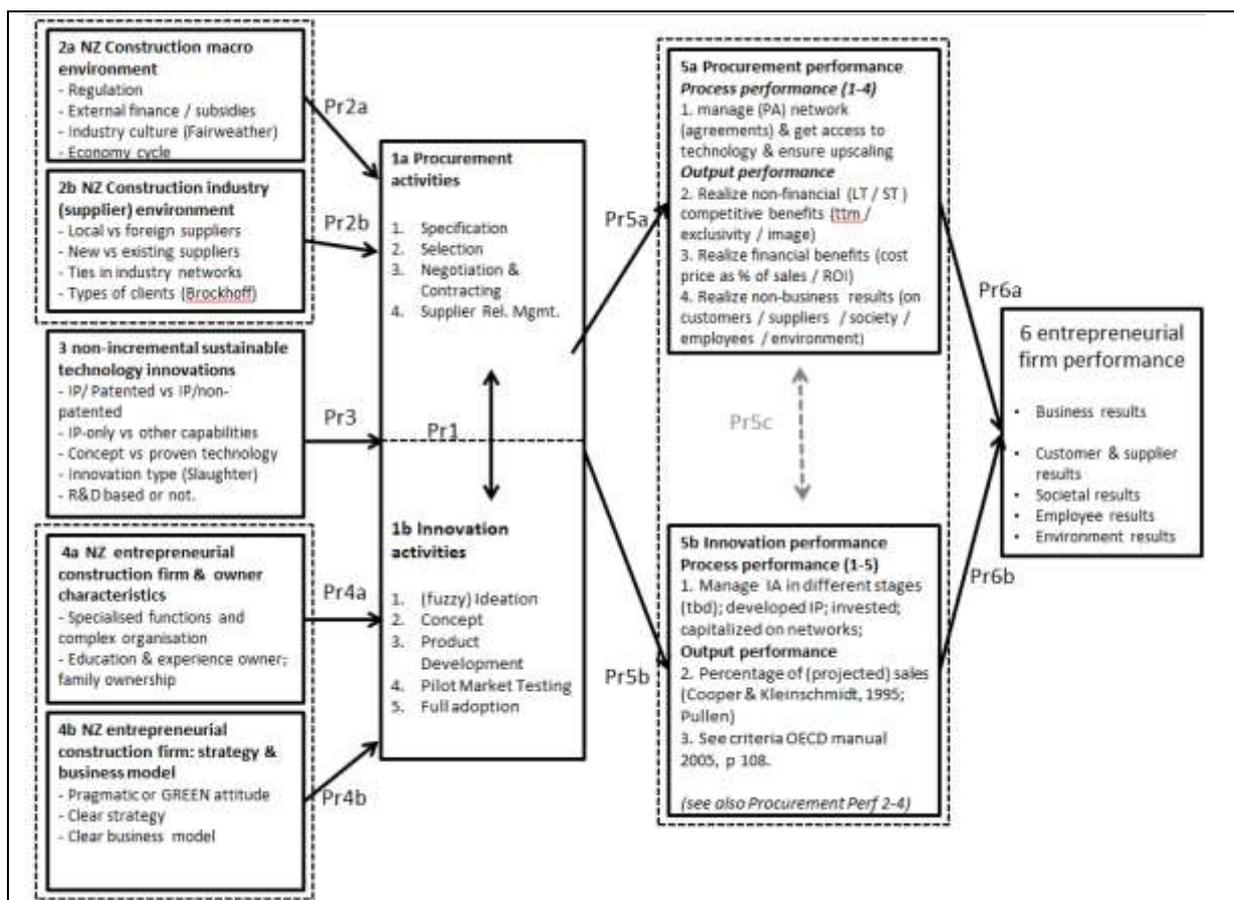


Figure 7: Conceptual framework of this research with dominant variables

For classifying the procurement activities (1a) this research proposes the validated procurement process framework of Van Weele (2010) as e.g. Pressey *et al.* (2009) also used in his SME research. For classifying the innovation activities (1b) this research analysed several classification methods (Slaughter, 2000; Rogers, 1970; Gambatese & Hallowell and Cooper & Kleinschmidt, 2001; p. 40). It proposes the validated framework stage-gate process of Cooper & Kleinschmidt (*ibid.*). In his later work Cooper (2013, p. 3-4) emphasised that his stage-gate process need not only focus on financial estimates but also on qualitative (subjective) measures. Especially with non-incremental innovations and also within small firms the innovation and

procurement activities will not follow a linear or sequential pattern but may be “iterative and messy” (Sexton & Barrett, 2003, p. 630; compare also Bocken *et al.*, 2014).

Both frameworks are on a sufficiently high level to account for these informal and iterating procurement and innovation activities interacting within entrepreneurial firms. During the empirical research the phases within both frameworks can be modified or subdivided into several sub-phases. Koen *et al.* (2001) for example developed an innovation process model for the “fuzzy” (i.e. unstructured and with high-uncertainties) ideation phase into five sub-phases. (See also Philips *et al.*, 2006). In Hagelaar & Staal (2015) the four procurement process phases were subdivided into eight phases for a better apprehension of procurement in small firms. Hence this research starts with high-level process phases and in the empery will adjust accordingly.

Research question and aims of this research

The overarching research question is: *How do entrepreneurial New Zealand firms procure non-incremental sustainable technology innovations for the construction industry?* The related research aims are:

1. Determine how procurement activities and innovation activities (i.e. related to non-incremental sustainable technology innovations) interact within entrepreneurial New Zealand firms.
2. Determine the effect of dominant (internal and external) variables on said interaction.
3. Determine value-adding procurement activities of said firms in economic, social and environmental terms when these activities are interacting with innovation activities.
4. Operationalize such value-adding procurement activities into best-practices.
5. Develop and communicate new insights to firms and other participants involved in this research, and via academic journals and conferences.
6. Provide recommendations for further research.

The theoretical social sciences perspective

This paper follows the Resource-Based View and the Resource-Dependency Theory in combination with the Stakeholder theory (Chicksand *et al.*, 2012):

- The *Resource-Based View* (Barney, 2012) holds that procurement can generate competitive advantage when acquiring resources that are value adding, rare, costly to imitate and have no substitutes. Hence procurement can bring important advantages when it can identify and manage value-adding innovative suppliers. This makes this theory relevant for this research.
- The *Resource-Dependency Theory* works similarly and posits that suppliers and effective relationships with suppliers are important sources of competitive advantage. However this theory is more aware of power plays and power differences (Pfeffer & Salancik, 1978). Hence it relates well with the uncertainties and risks of innovating partners in this research.
- The *Stakeholder Theory* takes a more holistic view and acknowledges the existence of different stakeholders related to the focal firm. These stakeholders have different values and want varying financial and non-financial results from firm activities. Firms who can meet such demands will better deal with their industry and macro environment, will be able to satisfy all stakeholders, and can also achieve good business performance (e.g. Kibbeling, 2010, p. 24). This theory is also relevant for this research.

Dominant variables and propositions

When using the above perspectives and the units of analysis, extant literature provided a number of dominant variables on the two independent constructs and also provided performance measures (Figure 2). The dominant variables have been used to describe main working propositions (from sets of related hypotheses) related to the procurement and innovation activities (Table 1). These will be explored (and modified) during the empirical research.

Table 8: Main working propositions

1	The coordinated interaction of (classified) procurement and innovation activities will lead to increased procurement (5a) and innovation (5b) performance.
2a	The procurement activities will vary with building regulation, industry culture and the economic cycle.
2b	The procurement activities will vary with the focal firm's clients and procurement system, the types of suppliers (foreign, domestic, new, existing), and types of (ties in) networks.
3	The procurement activities will vary with the amount of external development, whether it relates to non-product related or product related, with the Slaughter innovation typology and other innovation variables (notably IP, proof of concept, complementary assets) and will require different types of supplier relationships.
4a	The procurement activities will vary with the firm's age, experience and the organisational structure.
4b	The procurement activities will vary with the owner's entrepreneurial attitudes on risk, suppliers/networking and objectives/strategies.
5c	Procurement & innovation performance are interdependent and result in firm performance (6)

On the design of the future study

The overarching research question wants to know *what* is happening in innovation practice of the small entrepreneurial firms. More in particular it wants to know *how* the procurement and innovation activities interact within the subject firms and hence *how* certain phenomena relate to each other. This understanding of *how*, also needs some explanation of *why*. The type of research objective hence varies during the research. This makes this research theory building, theory testing and to a certain extent theory validating.

On a more philosophical level this research adheres to the phenomenological / realism position as this researcher sees the researched phenomena as social constructs i.e. subjective and individual perceptions and social interactions (e.g. Zou *et al.*, 2014, p. 318). The interpretation of these individual perceptions and interactions will develop meaning and knowledge which in part are subjective by nature.

Constructs in social science and hence in business research are context-based and must be interpreted, which Weber (1865-1920) coined as "Verstehen". This entails an approach which needs a close interaction of the researcher and the research objects (Delnooz, 2008; p. 68). Close interaction can entail action research (Lewin, 1948) where the researcher is participating

(intervening) in the business practices in order to suggest or bring change. Research can go one step further with collaborative research (see e.g. Chen *et al.*, 2013) when business practitioners discuss and build theory together with the researcher. This increases business relevance and the researcher can draw better conclusions on the state of the research. Potential risks are that the researcher does not manage the process of collecting reliable data or does not reflect (take an academic position) on findings from research. This must be neutralised in the research design.

Related to the above is the issue whether qualitative or quantitative research can offer the best method to deliver the objectives of this research. In an analysis on 101 construction research papers Dainty (2008, p. 6) found that 75% used quantitative methods. Only 25 % used qualitative methods of which 3 used focus groups or workshops. He critiqued the quantitative papers in their relevance to practice and questioned the ability “to provide a rich and nuanced understanding of industry practice” (Dainty, 2008, p. 7). On the other hand he also critiqued the qualitative papers to only rely on semi-structured interviews. Yin (2004), Saunders (2009) and others mentioned valid reasons for using one of both approaches, or combining the two. Considering this research needs rich data it will use a qualitative approach (Neuman, 2014). Irrespective of the chosen research method(s) this research must have adequate rigor, notably confirmability (repeatability), reliability and validity (e.g. Huberman & Miles, 1994).

Research methods

This research needs a flexible design. However at this stage it plans the three following empirical methods:

1. *Exploring interviews*: This study will have exploring semi-structured interviews for identifying participants and discussing and refining research design and outcomes.
2. *Focus research*: This study will in part use a collaborative focus method (Latham, 2008) based on Tan & Brown (2005) called *research world café* (Schiele, 2012). This focus group method differs from traditional focus group methods in that academics and practitioners both have the role of co-researchers and both generate, refine and test knowledge (Schiele, 2014).
3. *Case studies*: This study will use two rounds of multiple case studies (Eisenhardt, 1989). The first round is explorative by nature (i.e. try to understand) and will use classic case study methodology. The second round is theory building (perhaps also testing) by nature and could see more action research (Mueller, 2005).

The focus studies and the case studies will be conducted in alternating rounds (Figure 3). It is expected that *two* rounds totalling 6 - 10 case studies and *three* rounds of focus groups with each 10 - 15 participants will suffice to obtain sufficient rich data. However depending on the intermediate research outcomes the 2nd round of case studies could be action research or could be replaced or supplemented by a survey. Likewise the 3rd round of focus study could be designed differently. This design will ensure triangulation (Edwards & Holt, 2010) on several levels. The paper will now discuss the relatively novel focus research in more detail.

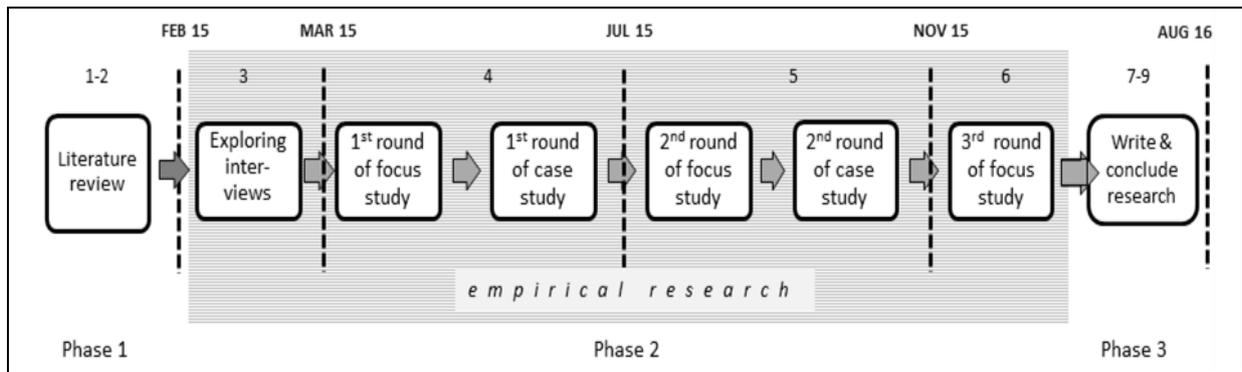


Figure 3: Research planning with the three empirical research methods

Determining an adequate focus group approach

A traditional *focus group* approach (group interview) consists of a number of experts and researcher(s). Experts will be asked questions and can also respond on each others answers. This will help participants and the researcher in obtaining generating knowledge about complex subject matters (Verschuren *et al.*, 2010, p. 232). Disadvantage of this method are the possibility of group-think and bias, and the relatively weak position of the researcher (Van Engeldorp Gastelaars, 1998, p. 308). Such disadvantages could be avoided in a Delphi study.

A conventional *Delphi-study* approach consists of two or more rounds of posing written questions to experts, and analysing their written opinions which should lead to increased knowledge and a convergence of opinions (Verschuren *et al.*, 2010, p. 233). An advantage is that participants can develop their knowledge. The researcher will again take the lead in developing research questions and hypotheses. The absence of face-to-face discussions makes interactions among participants limited and knowledge generation time-consuming. It also requires a steady base of participants. Other disadvantages are the difficulty to verify the precision of the method (that is manipulation by participants or the researcher) and the lack of interaction which for example is needed to clarify questions posed by the researcher (Landeta, 2011, p. 1630).

The *nominal-group-technique* consists of a small number of experts who follow a strict process in producing ideas (proposals or answers) posed to them by the researcher. They first put down their ideas in writing, and only then explain them to the other experts in a discussion. Then experts individually and anonymously prioritize the ideas which are summarised by the researcher. Although the interaction produces good results, according to Landeta (*ibid*) these are still less reliable than Delphi due to group-effects.

To overcome weaknesses of the above methods Landeta (2011, p. 1628) combined the three. Although this approach seems an improvement it still requires considerably time and effort from participants. This approach furthermore has not been validated in other research.

The *world-café approach* consists of a number of structured parallel focus group discussions. It was developed by Tan & Brown (2005) and found a wide application abroad and also in New Zealand (see e.g. Fouché, 2011). The related *research world café* approach was developed by Schiele (2012) and successfully applied in three Dutch procurement-related PhD studies. It compensates for weaknesses found in both the Delphi (i.e. time-consuming for participants) and the traditional focus group setting (i.e. risk of group-think, Hoffmann, 2011). Table 2 summarizes the four group-type methods.

Table 2: Comparison of group-type research based on Schiele (2014) and Landeta (2011)

	Delphi method	Focus group	Nom. Group Techn.	Research world café
Objective	Obtain reliable data from certified experts through strategically designed surveys. Research consensus.	Understand / interpret theoretical knowledge in a new or different context.	Two or more rounds of brainstorming, open discussion of ideas or problems and voting to refine and prioritize.	Generate or refine and 'test' knowledge relevant to practitioners & researchers.
Setting	Online with 1-3 rounds or enquiry.	Face-to-face discussions of interacting experts.	Physical location (or webbased) for several times with exchange of large amounts of data.	Preparation 'online'; and then moderated discussions in one physical location. (One of two days)
Role of academics	Researchers.	Researchers.	Co-researchers?	Co-researchers.
Role of participants	Experts (co-researchers?)	Experts.	Co-researchers	Co-researchers.
Documentation	Qualitative and quantitative survey results.	Transcripts.	Quantitative data on complex influence / confounding factors.	Transcripts / notes, flip charts; pictures.
Time efforts participants	Long throughput time. Risk of losing participants.	Less time consuming for participants.	Less time consuming for participants.	Less time consuming for participants.
Potential weaknesses	Selection process of experts; communicating the problems; Number of rounds & efforts from experts; measures of consensus; feedback.	Bias due to potential dominance of group members. Costs & logistics of experts. Complex data analysis. Needs 6 – 10 participants.	Cost and logistics or experts. Need highly qualified panel. Less reliable than Delphi. Needs 5 - 9 participants.	Selection process of experts. Cost and logistics or experts. Need 10 – 15 participants per round.

	Delphi method	Focus group	Nom. Group Techn.	Research world café
	Limited interaction. Need 10 – 15 participants.			
Validation	Mostly by researchers.	Mostly by researchers.	Joint validation with stickers / voting etc.	Joint validation with stickers / voting etc.
Source	See also Hallowell & Gambatese, 2009 Landeta, 2011	Schiele, 2012 Landeta, 2011	Toole & Hallowell, 2013; Hallowell & Gambatese, 2009 Landeta, 2011	Schiele, 2012
Method described in	Hallowell & Gambatese, 2009 Landeta 2011, with references.	Kruger, 1994 Landeta 2011, with references.	Erffmeyer & Lane, 1984; Gallagher, 1993; Landeta 2011, with references	Hoffmann, 2011 Huttinger, 2013 Schiele, 2014

The focus group studies of this research will be conducted in line with research world-café approach as it (1) is less dependant on a steady base of participants, (2) is less time-consuming for participants, (3) yields results which are less subjected to interviewer-bias or group-think and (4) has multiple discussion rounds which increases (internal and external) validity. Although Pulles & Schiele (2011) stated that this approach can replace case studies, this PhD research will use case studies and focus studies in alternating combinations. The focus studies will be conducted in three rounds. The first round will be more explorative (inductive); the latter two will be geared towards testing and validating (deductive). The latter two hence help strengthen (and to a certain extent generalize) findings from the case studies. As an option this research planned a parallel (fourth) round in October 2015 during an SME conference in The Netherlands.

On inter-subjective performance measures

This research will identify and conduct research on innovative entrepreneurial firms. The three main selection criteria are:

1. The focal firms either generate *measurable and significant value* while conducting procurement and innovation activities, or have a *clear potential to generate such value*. The term *value* (benefit) is seen here as the difference between the procured value from suppliers versus the (potential) value provided to customers and other stakeholders. Hence this can be a monetary value but also a non-financial value, and can have a short-term horizon or a long-term horizon.
2. The value is related to *sustainable* innovations for the construction industry. The concept of sustainability has many definitions and refers to meeting both economic, and social & environmental requirements (based on Brundtland, 1987).

3. The focal firms exhibit *entrepreneurial characteristics* as described earlier. These criteria are mainly qualitative by nature and hence also have a subjective element.

“Beauty is in the eye of the beholder” (Hungerford, 1855-1897) and so is value. The appreciation (see also Vickers, 2010) whether an improvement is indeed a *non-incremental sustainable innovation* will vary with the position in the construction supply chain and the particular interests of stakeholders. This appreciation will also vary with time and with the geographical place or specific industry. For the stakeholders involved in this research *value* will be related to their perception of *non-trivial change*.

Value can also be a *potential* value which is not yet or ultimately will not be realised. Value can have been realised in other New Zealand industries or in construction industries abroad, but not (yet) within the context of the New Zealand construction industry. This research will comprehend such value from the position of the focal firm, its suppliers, and its customers and other stakeholders, taking into account these aspects of time, industry and geographical position. The perceived added-value within the three performance constructs will hence be measured via qualitative and subjective rating schemes (e.g. Rose & Manley, 2012, 2014) which will be developed further after the exploring interviews.

In conclusion

This research wants to learn what the role of procurement is with non-incremental sustainable technology innovations in entrepreneurial New Zealand firms supplying the construction industry. It established a knowledge gap in extant literature. To bridge this gap this paper developed a conceptual framework with dominant variables and propositions which will be tested in empirical research. The research outcomes will be beneficial to innovating firms and their business partners, to owners and occupants of buildings, and to the wider environment. Hence it has a scientific and business relevance, and a social and environmental relevance.

The authors would welcome feedback and suggestions on the ACERE 2015 conference.

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Business Models For Healthcare Social Enterprises

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Business Models For Healthcare Social Enterprises

Abstract

The business model has been referred at general level to as a statement, and furthermore has defined as the content, structure and governance of transactions designed so as to create value through the exploitation of business opportunities. Recently the concept of business model has started to analyse social businesses. Many of the social enterprises operates at healthcare sector. This paper focus on business models for healthcare social enterprises applied or awarded by the Finnish Social Enterprise Mark. The purpose of our study is to analyse how social business model is implemented in our case companies, how they address their core strategies, social mission, and social and economic value creation processes, and what is their financial performance. The results of our qualitative research indicates that social enterprise business model is one option to operate in healthcare sector but there is much work ahead for social enterprises to differ themselves clearly in that sector and develop business model so that it is possible to do also financially health business beside the social mission.

keywords: social entrepreneurship, business models, social mission, health care business

1 Introduction

The number of business model studies has exploded since year 1995 (Zott, Amit & Massa, 2011). According to Zott's et al. (2011) research about 1,200 articles have been published in peer-reviewed academic journals in which the notion of a business model is addressed. The emergence of the business model concept have been driven by for example the advent of the Internet (e.g. Amit & Zott, 2001) or rapid growth in developing markets and interest in "bottom-of-the-pyramid" issues (e.g. Prahalad & Hart). The business model has been referred at general level to as a statement (Steward & Zao, 2000). Furthermore Amit and Zott (2001) have defined a business model as "the content, structure and governance of transactions designed so as to create value through the exploitation of business opportunities". Recently some authors have started to use the concept of business model to analyze social businesses. For example Yunus et al. (2010) recognised in their study four components of a social business model: 1) value proposition, 2) social profit equation, 3) value constellation and 4) economic profit equation.

Social enterprises are often described as hybrid organizations bringing together features from the not-for-profit and for-profit sectors (Smith et al. 2013). Their identity is a combination of normative identity drawn from the social mission and of utilitarian economic identity (Moss et al. 2011). Because of this hybrid nature of social enterprises they are seen for one option to produce welfare and healthcare services beside the public sector in developed economies.

In this paper we focus on business models of healthcare social enterprises which have applied or awarded by the Finnish Social Enterprise Mark. The purpose of our study is to analyze how social business model is implemented in our case companies, how they address their core strategies, social mission, and social and economic value creation processes, and what is their financial performance.

The paper is structured as follows. After the introduction section we go through essential literature about business models and social enterprises. In the third section we describe the research design and case enterprises including country context where they operate. In the final section we discuss about our findings.

2 Literature review

Business models

The business model concept is during the recent years attracting much attention from scholars, and seems useful in offering guidance as how to create social businesses (Yunus et al., 2010). At the general level there seems to be two prominent debates in the business model literature. Some researchers are concerned the lack of a generally accepted definition including the number and nature of business model components (e.g. Shafer, Smith, & Linder, 2005). The other debate is concentrating on the question whether business models should be regarded as static or dynamic (e.g. Demil & Lecocq, 2010). Shafer et al. (2005, p. 202) define business models as the “*representation of a firm’s underlying core logic and strategic choices for creating and capturing value within a value network*”. Whereas some researchers state that a business model is a conceptual tool to help understand how a firm does business and can be used for analysis, comparison and performance assessment, management, communication, and innovation (e.g. Osterwalder and Pigneur, 2005). On the other hand business models address a broader set of stakeholders than just paying customers and identify the role of the firm within the network as a means to define markets (Chesbrough, 2006; Zott & Amit, 2008). The previous literature also shows business models as a holistic description on how a firm does business (e.g. Magretta 2002; Zott and Amit, 2010; Beattie and Smith, 2013) while, Teece (2010) describes that a business model articulates how the company will convert resources and capabilities into economic value. Additionally Teece notes that the business model is nothing less than the organisational and financial ‘architecture’ of a business and includes implicit assumptions about customers, their needs, and the behaviour of revenues, costs and competitors.

By analysing business models, it makes possible to understand deeper how firms define their competitive strategies through the design of the products or services they offer to their markets, how they charge for them, and additionally how they differentiate themselves from other firms by the value proposition (Rasmussen, 2007). Shafer et al. (2005) identify four major business model components, reflecting the underlying patterns, i.e. strategic choices, creating value, capturing value, and the value network.

Furthermore, Yunus et al. (2010) state that despite growing literature on the business model concept, there is no consensus as to its definition yet. Yunus et al. continue that after their in-depth analysis of business model components in academic literature shows that, among the plethora of definitions, three elements are usually distinguished: the products/services proposed to customers, the way the companies are organized so as to deliver this product and service to its customers, and their revenue model. The literature shows that different authors are concentrating on separate components of different business models. For example Chesbrough and Rosembloom (2002) were focusing on in their study especially the revenue models, whereas Zott and Amit (2008) were focusing on transactions between the firm and its external constituents. Yunus et al. (2010) suggest that a business model has three components. Firstly a value proposition, which answers to the question: ‘Who are our customers and what do we offer to them that they value?’ Secondly, a value constellation, which answers to the question: ‘How do we deliver this offer to our customers?’ Yunus et al. emphasizes that these two components need to fit together in order to generate a positive profit equation, which is the financial translation of the other two, and includes how value is captured from the revenues generated through the value proposition, and how costs are structured and capital employed in the value constellation. On the other hand, the earlier studies on social responsible businesses suggest that although commercial enterprises can have transformative social impact, social value creation as a primary mission is more commonly found in social enterprises rather than in commercial ones (Austin et al., 2006). Furthermore, McDonald (2007) states that this view

implies that enterprises with an emphasis on public good rather than on private gain will be less successful in terms of market growth and profitability.

Social entrepreneurship

Several researchers (e.g. Mair and Martí, 2006; Short et al., 2009; Zahra et al., 2008; Zahra et al., 2009) have pointed out that social entrepreneurship has led to an emerging research stream of interest to academic researchers and scholars in management and entrepreneurship. In many developed and developing countries social entrepreneurship is recognized as important in boosting increasing economic, environmental and cultural wealth and also in facilitating social change (Danko et al., 2011, Estrin et al., 2013). Short et al. (2009) state that despite rapidly increased interest in social entrepreneurship, academic research has been challenging. Definitions of social entrepreneurship have been developed in several different domains, e.g. not-for-profits, for-profits, the public sector and combinations of all these fields. The understanding of the concept of social entrepreneurship is not yet unified among scholars.

Trexler (2008) states that social entrepreneurship is a simple term with a complex range of meanings. Zahra et al. (2009) emphasize that lack of a unified understanding of the concept is one of the major barriers to the advancement of academic research on social entrepreneurship. In recent years entrepreneurship researchers have started to find common view on the concept of social entrepreneurship but multiple definitions of the concept persist from scholars working in other disciplines such as accounting, economics or social science (Short et al. 2009). According to Lepoutre et al. (2011) despite the unresolved definition debate there seem to be several characteristics that distinguish social entrepreneurs from traditional commercial entrepreneurs and also from traditional charities. They state that in particular three selection criteria seem to stand out in the literature: 1) the predominance of a social mission, 2) the importance of innovation and 3) the role of earned income.

Mair and Marti (2006) determine that the main difference with traditional commercial entrepreneurship is not that such entrepreneurship is a-social, but that social entrepreneurs associate their top priority with the creation of social value. At the same time economic value creation is seen as a necessary condition to ensure financial viability. In other words social entrepreneurs in their businesses try to (and indeed must) seek an optimal balance between social impact and market success.

Social enterprises are therefore often described as hybrid organizations bringing together features from the not-for-profit and for-profit sectors (Smith et al. 2013). Their identity is a combination of normative identity drawn from the social mission and of utilitarian economic identity (Moss et al. 2011). According to some researchers, the hybrid nature; dual identity and two different, even conflicting, operating logics is likely to cause tensions within social enterprises. Entrepreneurs face a choice when to emphasize social mission and when the business venture (Battilana and Dorado, 2010; Dacin et al., 2010.) Smith et al. (2013) found that both organizational and acquisition growth might launch the trigger a struggle on whether to remain true to the social mission.

Lepoutre et al. (2011) claimed that according to the existing literature the second criterion of social entrepreneurship is the importance of innovation. The literature underscores that the successful pursuit of social entrepreneurs' missions requires innovative delivery of products and services (see e.g. Alvord et al., 2004; Chell et al., 2010; Mair and Marti, 2006) Traditional commercial entrepreneurs may set similar targets to their business (Douglas and Shepherd, 2000; Wiklund et al., 2003) but Lepoutre et al. (2010) emphasized that social enterprises especially have to actively engage in the provision of innovative solutions to complex social problems. Otherwise social enterprises may fall outside the scope of social entrepreneurship.

3 Research design

Data collection and methodology

The Finnish Social Enterprise Mark launched in 2012 to give identity growing social enterprise sector in Finland. So far 43 companies have received that mark. Many of those companies operate at the health care sector. The relatively large public sector dominated the provision of social services in Finland during the latter part of the twentieth century. Earlier private for- or non-profit organizations provided only little and complementary services. The health care sector in Finland has faced a structural change due to the financial problems of the public sector, and therefore there is more need at the market for the companies that operate between purely business companies and public sector organizations. In order to identify the features of business models of healthcare social enterprises, six case companies were analyzed with the qualitative methods. All five case companies operate at the health care sector in Finland and provide diverse selection of health care and medical services. Four of our sample companies have received the Social Enterprise Mark, and one has applied that but the application was abandoned. One company identify itself as a firm with a social mission, but has not applied the Social Enterprise Mark so far. Our study is mainly descriptive in nature and is based on content analyses of external data sources such as Web-pages, financial statements from the years 2010-2012, stakeholder reports and certificates of incorporations. Content analysis is a method of codifying the text or content of a piece of writing into various groups or clusters depending on selected criteria (Weber, 1988). The technique has been widely used in determining the extent and nature of corporate social reporting (Adams et al., 1995; Adams and Harte, 1999; Gray et al., 1995).

Country context

Finland as a one Nordic country has adapted so called Scandinavian welfare model where the State provides extensive public services such as free education, healthcare, housing etc. and a high level of social security to all citizens. In such a society, the third sector and social enterprises have played a relatively minor role in the provision of social and welfare services. The State and municipalities are generally responsible to organise and produce social and welfare services, and those services are produced mainly with tax funds. It has been typical for Finland that organisations which produce social welfare and health services have traditionally been quite big, and very often they function nation-wide and chiefly are financed and supervised by the public authorities.

In Finland since the 1990's, there has been a major shift in the provision of welfare services from the public sector to the private sector- driven by a need for more and different types of individualised welfare services leading to increased competition and the emergence of markets for delivery of public services. The shift in public services provision from public to private sector is likely to increase in future because of municipalities' service provision strategies, customer's choice approach and tax exemption for household services and some homecare services. (EU Commission, 2014)

Case enterprises

According to definition of the Finnish Social Enterprise Mark the general goal of social enterprises is to create public benefit. Its founding principle is to solve social problems and to strive for social goals. In order to meet these goals, a social enterprise uses over a half of its profits to promote its aims and to develop its ways of action. In addition, the characteristics of a social enterprise include also openness, client centric approach, transparency of business and

generating social impact. The Finnish model of social enterprises is more business oriented and excludes all forms of social enterprises which do not trade on the markets or mix e.g. volunteer work on its activities.

In Finland, the basic principle for social enterprises is that the ethos of financing social purpose through commercial activity ensures that social enterprises' social outcomes are integral to their economic performance. When social enterprises use profits for the promotion of company's social goals, social enterprises strengthens their ability to create social value. Furthermore, the advantages of revenue generation from business are seen to increase the autonomy and flexibility of the organization to adapt to and meet the needs of the constituencies they serve and greater independence on the social enterprise in terms of its legal structure and strategies. (EU Commission, 2014)

The market situation for private healthcare enterprises is challenging because of dominating public sector organisations. This kind of market situation means that essential competitive advantage for private sector enterprises have to be the quality of services. Even private sector can set up the prices of their services freely, they have to consider the competition situation and the price level of whole private healthcare sector.

Case enterprise A is owned by third sector organization (TSO). It provides hospital services of a wide spectrum, from orthopedic services to rehabilitation, diagnostics and individualised therapy services. The purpose of the enterprise is to make sick leaves shorter and get employees quickly back to work and reduce sickness pensions. The social mission is blended case enterprise's daily operations, additionally this case enterprise invest on scientific research and development activities. This enterprise is a holder of the Social Enterprise Mark. Case enterprise A is a medium sized enterprise measured by turnover. The turnover has been around 12-13 million Euros, and it has been quite stable during the latest years. During the last three years case enterprise A has not been able to generate any profits.

Table 1: The key figures of case enterprise A

Case A	year	2012	2011	2010
NET TURNOVER	t€	12 892	13 211	13 293
Wages and salaries		-8 430	-6 930	-7 246
OPERATING RESULT		-283	-50	-230
RESULT BEFORE TAXES		-286	-53	-248
Income taxes		0	0	0
RESULT FOR THE FINANCIAL YEAR		-286	-53	-248

The turnover per person is rather low comparing to other case enterprises. The profitability is at weak level and the equity ratio is reasonable. The liquidity (quick ratio) is quite close to the median of whole sector.

Table 2: The key ratios of case enterprise A

Case A	year	2012	2011	2010
Number of personnel		163	172	177
Turnover / person (1000e)		79,1	76,8	50,1
Operating margin		-0,7	1,1	-0,4
Quick ratio		1,3	1,1	1
Return on investment		-14,6	-2,4	-7,1
Equity ratio		28,5	26,7	15,6

Case enterprise B is the largest infertility research and treatment organization in Finland. It has done the pioneering development efforts span more than 25 years. The key operations of this enterprise are advocate, educate and inform. They also apply international research and treatment methods that comply with the latest industry standards. Their goal and social mission is a society with a balanced population development and where families live a good life. This enterprise is owned by TSO and they distribute their possible surplus to public good. This enterprise has the Finnish Social Enterprise Mark. The case enterprise is a small sized enterprise measured by the turnover. The turnover has been quite stable during the last three years, and during that period enterprise has been able to generate profit only in 2011.

Table 3: The key figures of case enterprise B

Case B	year	2012	2011	2010
NET TURNOVER	t€	5 411	5 486	5 040
Wages and salaries		-2 585	-2 420	-2 418
OPERATING RESULT		-119	147	-52
RESULT BEFORE TAXES		-117	148	-49
Income taxes		0	0	0
RESULT FOR THE FINANCIAL YEAR		-117	148	-49

The turnover per person and liquidity are lower than the medians at the case enterprise's sector. The degree of solvency is poor, and enterprise is heavily dependent on external funds.

Table 4: The key ratios of case enterprise B

Case B	year	2012	2011	2010
Number of personnel		58	56	61
Turnover / person (1000e)		93,3	98	82,6
Operating margin		-1,2	4	0,5
Quick ratio		1,1	1,3	1
Return on investment		-19	24,8	-7,9
Equity ratio		-28,6	-16	-36,6

Case enterprise C is an early stage social enterprise. It has created a business model which enables responsible Finnish nursing services and provides growth possibilities for them. This enterprise focus to provide training arrangements for their entrepreneurs. The enterprise is owned by private persons. The social mission is to promote social enterprise business model. The profit distribution is limited and it has the Social Enterprise Mark. The case enterprise C is a small sized enterprise, and its turnover has increased heavily which is natural for an early stage enterprises. During the last three years case enterprise has not been able to generate profits.

Table 5: The key figures of case enterprise C

Case C	year	2012	2011	2010
NET TURNOVER	t€	628	178	46
Wages and salaries		-136	0	-6
OPERATING RESULT		-134	-130	-24
RESULT BEFORE TAXES		-133	-133	-25
Income taxes		0	0	0
RESULT FOR THE FINANCIAL YEAR		-133	-133	-25

The degree of solvency has decreased during the period, but case enterprise has been able to keep liquidity at reasonable level.

Table 6: The key ratios of case enterprise C

Case C	year	2012	2011	2010
Number of personnel		2 ?	?	
Turnover / person (1000e)		314 ?	?	
Operating margin		-20,9	-72,5	-50
Quick ratio		0,8	1,3	1,1
Return on investment		-43	-46,1	-20,9
Equity ratio		12,8	48,1	32

Case enterprise D offers the services of some 600 physicians and other health sector experts. In addition it provides comprehensive occupational healthcare services, their healthcare professionals offer their services also to private customers not associated with a particular company. They have also invested heavily in well-being of their own employees. It is fully-owned by non-profit foundation (TSO). The enterprise accumulates dividends directly to the owner's social mission. The social mission of the owner is to help children in need and their families. This enterprise has the Finnish Social Enterprise Mark. The case enterprise D is a large sized enterprise measured by turnover. The turnover has increased during the three years period and it has been able to generate profits in all three years.

Table 7: The key figures of case enterprise D

Case D	year	2012	2011	2010
NET TURNOVER	t€	73 302	66 748	57 728
Wages and salaries		-24 641	-22 808	-20 133
OPERATING RESULT		6 150	5 524	4 675
RESULT BEFORE TAXES		6 082	5 591	4 674
Income taxes		-1 482	-1 404	-1 152
RESULT FOR THE FINANCIAL YEAR		4 600	4 187	3 542

The turnover per person is quite high. The liquidity and the degree of solvency are at reasonable level, but both ratios are lower than the median of sector.

Table 8: The key ratios of case enterprise D

Case D	year	2012	2011	2010
Number of personnel		683	?	623
Turnover / person (1000e)		107,3	?	92,7
Operating margin		10,1	10,1	10,1
Quick ratio		1,5	1,6	1,7
Return on investment		43,8	41,5	34,3
Equity ratio		47,2	46,2	46,7

Case enterprise E provides comprehensive public social- and healthcare services to one small in the Middle of Finland. The social mission is to keep the price level of healthcare services at the same level as pure public organisations have. The enterprise's business model is a new model of collaboration between private health care enterprise and public health care center. They committed themselves to limited profit distribution and limited return. It is owned by the city (49 %) and private enterprise (51 %). According to enterprise's own statements they have achieved following results with this new collaboration model: lower costs (efficiency has risen), patient satisfaction has increased, much easier to hire employees and nowadays they like their work. The enterprise identify itself a social enterprise but can't get the Social Enterprise Mark because its criteria does not allow public sector as an owner of social enterprise. The figures and ratios of case enterprise E are from the consolidated financial statement, because the case enterprise E itself is recently established and therefore figures and ratios are not available. Consolidated group, that owns social enterprise E, is a medium sized enterprise measured by turnover of whole group. It has growth heavily mainly by buying other enterprises. It has been able to generate profits despite of growth.

Table 9: The key figures of case enterprise E

Case E, consolidated financial statement	year	2012	2011	2010
NET TURNOVER	t€	24 329	19 432	6 199
Wages and salaries		-10 687	-7 672	-2 113
OPERATING RESULT		2 740	1 969	1 553
RESULT BEFORE TAXES		2 162	1 595	1 210
Income taxes		-266	-323	-243
RESULT FOR THE FINANCIAL YEAR		1 715	1 227	967

The turnover per person is rather low, and liquidity poor. The degree of solvency has varied between 35 and 40 percent.

Table 10: The key ratios of case enterprise E

Case E, consolidated financial statement	year	2012	2011	2010
Number of personnel		311	388	84
Turnover / person (1000e)		78,2	50,1	68,1
Quick ratio		0,3	0,9	0,7
Return on investment		6,9	8,1	20,8
Equity ratio		35,7	40,5	37,7

Case enterprise F is specialised on cancer treatments. Its core business consists of diagnosis, treatments and follow-up care of cancer. They provide services through the treatment and follow-up periods for those with a cancer diagnosis. The treatment is individualized for each person, depending on the life circumstances and the type of cancer. The goal is to maintain the optimal quality of life. The hospital supplements the services of the public health services: they treat patients with financial commitments by the municipalities and the employer payment commitments. They invest in the academic research. With the help of the cooperative network of top experts, they can provide the newest cancer treatment methods and expertise to our patients. The reason for establish the business indicates about their social goals and mission: *“there is a lot of money out there, and people who want to do good with their money”* (CEO of the case enterprise F). The enterprise is privately owned, and does not hold the Social Enterprise Mark. The case enterprise is small sized enterprise and has stabilised the level of turnover during the last two years. It has not been able to generate any profits during the period.

Table 11: The key figures of case enterprise F

Case F	year	2012	2011	2010
NET TURNOVER t€		8 335	8 677	6 057
Wages and salaries		-2 821	-2 669	-2 082
OPERATING RESULT		-1 469	-587	-1 719
RESULT BEFORE TAXES		-1 583	-721	-1 827
Income taxes		0	0	0
RESULT FOR THE FINANCIAL YEAR		-1 583	-721	-1 827

The turnover per person is high even the profitability is poor. The degree of solvency is negative and liquidity reasonable.

Table 12: The key ratios of case enterprise F

Case F	year	2012	2011	2010
Number of personnel		39	37	31
Turnover / person (1000e)		213,7	234,5	195,4
Operating margin		-15,5	-5,4	-25,2
Quick ratio		1,1	1,9	3,1
Return on investment		-37,7	-15,3	-55,3
Equity ratio		-72	-29,9	-7,9

Business model matrix

Table 13 summarize a value proposition, a value constellation and business performance of our sample enterprises. The business model matrix is adapted from Yunus et al. (2010) work.

Table 13: Business model matrix (Yunus et al. 2010)

	Value proposition	Value constellation	Economic value generation and performance
Case A	Customers: a) all who wants better healthcare than public sector offers, and have afford for private sector healthcare services, b) beneficiaries of owner organisation (TSO), disable people, especially people who injured during the war. Value: individual and customer-oriented services and high quality	Value delivery: private clinics, education and research	Poor business performance, Dependent on owner’s funding Owner is partially funded by donations and public support
Case B	Customers. a) people who need infertility treatments b) society, owner’s (TSO) mission is the promote welfare of children, and families, and affect public opinion, and secure balanced population Value: high quality, and research based services	Value delivery: private clinics, education, research and publications	Business performance: poor Dependent on owner’s funding Owner is partially funded by donations and public support
Case C	Customers: social enterprises, and old people Value: social enterprise business model for old people housing	Value delivery: education and consultation, “franchising type” network	Growing early stage business performance, owner-managed and funded
Case D	Customers: a) private people and enterprises (occupational healthcare services) in metropolitan area, b) beneficiaries of owner (TSO, deaconess foundation) Value: promoting welfare of people, and canalising	Value delivery: private clinics, education and research, voluntary network	Large scale business and good financial performance Owner is partially funded by donations and public support

	surplus through the foundation to the disadvantaged groups		
Case E	Customers: a) people who need public healthcare services in certain region b) public sector (lower costs) Value: higher quality services than traditionally produced services, and cost savings for tax payers	Value delivery: public/private partnership owned clinics	Growing business and good financial performance, Owner-managed and funded
Case F	Customers: people with cancer internationally Value: without delay services and world-class research based care	Value delivery: Private clinic	Poor financial performance Owner-managed and funded

4 Conclusions and discussion

Our study is focusing on social enterprise business model in healthcare sector. This study is based on the Finnish data but we know that even if it varies between countries some influences are global, and quite similar than in Finnish context. Our study contributes the existing literature of business models and especially in social enterprise context at the health care sector. Based on the qualitative analyse of our study it seems that for healthcare social enterprises it is not very easy to identify their social mission clearly. If a social mission is blended daily operations, it is challenging for social enterprises clearly identify themselves different from other enterprises in healthcare sector. Based on our case enterprises our suggestion is that social mission should be something else and more than “high quality services and care”, which is often self-evident for the most of the healthcare enterprises.

In social enterprises that are owned by foundation or association is a risk for opportunistic behaviour of management. This kind of behaviour may lead to heavier cost structure than in the sector in general, and furthermore to poor financial performance. In our sample case enterprises A and B imply about this kind of situation. For social enterprises as well as main stream enterprises entrepreneurial oriented behaviour is essential in order to enterprises are financially healthy.

In Finland and in some other countries there is limitations for dividend distribution in social enterprises. For some of our case enterprises, especially A, B, C and F, such limitations are meaningless so far, since they have not been able to generate any profits so far that could be distributed as dividends. On the other hand it is the case in several countries that many main stream enterprises limit their dividend distribution freely for example because of taxation. In some countries only distributed profits are taxed or the tax rate is depended on the level of enterprise’s net assets, e.g. the tax rate is lower for enterprises that have higher net assets. These kind of taxation regulations encourage owners leave profits inside the enterprises, and there is now need for special limitations for divided distributions. Our suggestion is that for social enterprises it is much more important that all cash flows in and out of enterprise are transparent than limited dividend distribution. Additionally such limitations may lead to situation where

management and/or accountants of social enterprises manipulate the level of profits during the fiscal year so that social enterprises do not show any profit because of limited dividend distribution. In many cases owners of social enterprises can draw money out of the enterprises in some other way than as dividends, e.g. as salary, rent, interest or provision.

In our sample case enterprise E has applied the Social Enterprise Mark but has not get it. In Finland the definition of social enterprise exclude enterprises where public sector organisation is one owner. However, it seems that such enterprises are able to profile themselves social enterprises that can have clear social mission, and are able to operate financially well. Our opinion is that there is now reason to deny the social enterprise status for enterprises where public sector organisation is a minor owner, if social mission is clearly addressed. Our suggestion is that there should be more business models where private and public organisations operate as partners. Our opinion is that social enterprise business model offers for such partnerships new paths to secure healthcare services in welfare states in the future.

To sum up social enterprise business model is one option to operate in healthcare sector but there is much work ahead for social enterprises to differ themselves clearly in that sector and develop business model so that it is possible to do also financially health business beside the social mission.

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Australian Defence Industry Smes Participating In Government-Funded Assistance Programs: Expectations And Opportunity Costs.

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Australian Defence Industry Smes Participating In Government-Funded Assistance Programs: Expectations And Opportunity Costs.

Abstract:

SME participation in government-funded assistance programs can divert resources to their application and administration. Addressing the research question about the value for SMEs to be involved in government-funded assistance programs, this research explored whether the gains to SMEs from these programs exceeded the costs. There has been growing academic interest in government-funded assistance programs, primarily in Britain, Western Europe and the United States, but only limited research has been done Australia and New Zealand. This research examined SME satisfaction, expectations, opportunity costs, trust and continued involvement. Two stages of data collection and analysis were involved. Firstly, convergent interviews were conducted with four experts, and secondly in-depth, face-to-face interviews were conducted with 23 defence sector SMEs. Findings showed most of SMEs were satisfied with the programs, mainly because it was beneficial to have competent, external parties examining their business. Few reported the presence of opportunity costs or any impact on their operations. This research could contribute to the development of government policies and practices in future programs, and help businesses making decisions about participation.

Key Words:

Public Policy for Entrepreneurship & Innovation, Management/Strategy/Organisation, Qualitative, Venture/Firm, High Tech/High Growth/High Potential Business, Performance and Growth

Introduction:

Government funded assistance programs for small to medium sized enterprises (SMEs) are common in developed economies (Storey 2006; Rotger et al 2012; Potter & Storey 2007). In Australia these programs aim to improve business practices, productivity and performance in SMEs, and are offered by all levels of government: federal, state and local. The aim of their government advisors should be to give SMEs ‘a hand-up rather than a hand-out’, in the words of a the managing director of a business experienced in the use of government funded assistance programs in an interview during the research. But executives in SMEs have concerns about participating in government-funded assistance programs (Wallsten 2000). They are concerned about bureaucratic processes, compliance requirements, reporting and its associated procedures, changes in requirements during the process and financial benefits. They question the overall value of participating as an intervention in the businesses operations and core business activities (Macdonald et al. 2005).

Moreover, many of the SMEs in the defence sector are influenced by government policies and practices, so any changes in them have the potential to affect an SME’s viability. When an SME becomes involved in a government-funded assistance program it is likely to put aside alternative business opportunities. Moreover, involvement in a program could consume management time and associated resources in order to adapt to its new conditions. Though some SMEs in the sector are totally reliant on defence contracts, most take a risk management approach by conducting business across a portfolio of industry sectors or markets (Beattie 1980; Ramanujam & Varadarajan 1989).

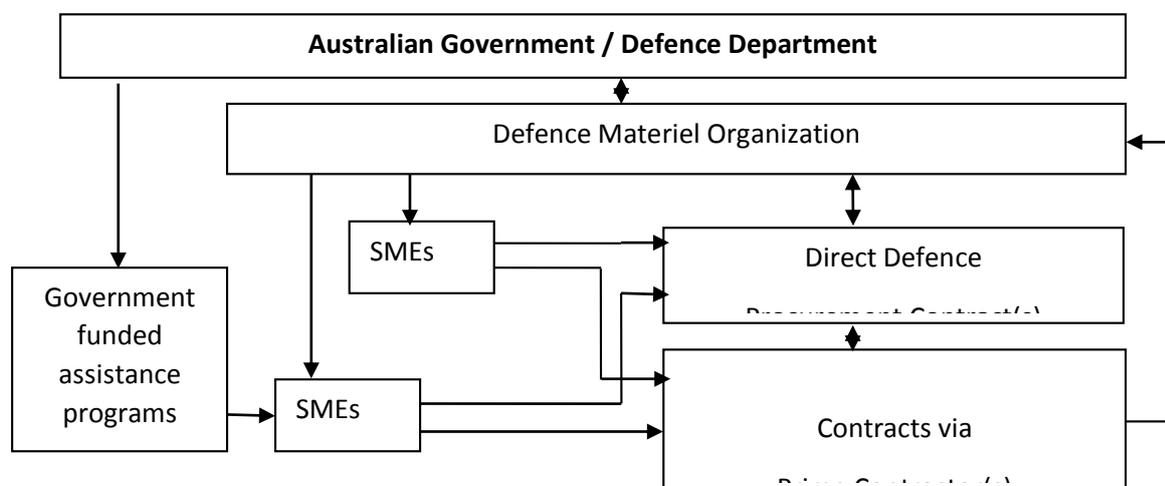
Nevertheless, anecdotal evidence has identified that some SME executives think that gains from involvement in a government-funded assistance programs are not worth the effort to acquire and manage it. Participation by a business in non-core activities can generate opportunity costs (Allen 1999), and this could be the case when SMEs in the defence industry

divert resources into a government-funded assistance program. Furthermore, some SMEs have a culture of independence and do not want to have a relationship with governments. Bennett (2007) stated that most SME owners-managers and entrepreneurs strive for independence and are often negative towards government interventions..

So this research aimed to gauge management perceptions about the value of government-funded assistance programs to SMEs. Questions that can be asked are: what is the perceived motivation of governments behind the programs, who pays for the intervention, and what opportunity costs might arise in the process? For this paper, the research question is: Is there value for SMEs to be involved in government funded assistance programs? In brief, this research questioned SMEs about expectations, attitudes and outcomes when participating in government funded assistance programs and what opportunity costs might be incurred in the process. Although research into government assistance and SMEs has become more common in the past 20 years (Blackburn & Smallbone 2008), to the best of our knowledge these questions have not been addressed. The research outcomes could help policy makers when establishing and managing government-funded assistance programs, and assist SMEs in their decision making about whether or not to participate in them.

As background, consider the context of the SMEs involved. Businesses in the defence sector rely on a continuous flow of orders for purchases connected to defence contracts. Examples include extremely *large* and complex items such as air warfare destroyers, diesel electric powered submarines, fighter aircraft and maintenance contracts. Examples of *smaller* orders include new components, sub-assemblies, and research and development projects (Defence White Paper 2009). All of the government-funded programs for both large contractors and SMEs involve complex relationships between the parties, as shown in Figure 1. The SMEs involved generally have a relationship with the end-client through assistance programs, whereas larger prime contractors are generally independent of such arrangements (Defence White Paper 2009).

Figure 1: The Defence Industry Procurement Supply Chain



Source: Compiled for this research

Literature review:

There is a well-established body of research into SMEs in developed societies (Storey 1999; Wren & Storey 2002; Hjalmarsson & Johansson 2003; Mole et al 2011). This research into SMEs has become a focus for government actions over the past 30 years, and has underpinned

much government policy in the sector (Blackburn & Smallbone 2008; McMahon 1998). An early government assistance program was the Economic and Social Research Council (ESRC) Small Business Initiative in 1981 (Burrows & Curran 1989). At that time, UK government resources were complemented by funds from the private sector and similar initiatives were augmented by the European Commission.

Literature around government issues involving SMEs has generally been on issues of policy and case studies around specific government programs. Though there has been some research about Australian and New Zealand SMEs in the defence sector (Dunne & Vougas 1999; Parker & Hartley 2003), there is little or no work about expectations and or opportunity costs experienced by SMEs involved in government-funded assistance programs. An opportunity cost is the benefit foregone due to choosing an alternative course of action (Victoravich 2010). There are consequences when business owners are prepared to enter into riskier activities such as government-funded assistance (Cassar 2006). The riskier activities are akin to the opportunistic mindsets of businesses (Parker and Hartley 2003), where the resulting opportunistic behaviour is a significant transaction cost in the process of establishing defence contracts. So the relationship between opportunity costs and the entrepreneur's personal asset base and higher managerial ability was examined in the research.

Assistance programs can be the public face of specific government policies designed to address issues in the economy. These issues may be the need for growth in areas such as individual business activities, exporting, contracts, employment or intellectual property through research and development. In addition, some government-funded assistance programs target issues such as labour re-distribution and one-off environmental or economic events. One major policy driver for governments in developed economies has been to grow the overall numbers of employees in the workforce (Curran & Storey 2002). To put government policy and expenditure of such programs into a context, each year the UK government spends more money on programs to assist business than it does on its' police force (Storey 2006). This figure demonstrates how involved governments are in the business sector. There are two sides to the debate on these government-funded assistance programs. One is asks about the justification of expenditure, and the other asks about the political motivations to offer assistance (Smith, 2000). This research focussed on the first dimension where government funded programs aim to improve business practices.

Prior literature has addressed the development of government policy, programs and the commercial sector (Curran & Story 2002; Hjalmarsson & Johansson, 2003; Blackburn & Smallbone 2008; Mole et al, 2009 and 2011; Bennett & Robson 1999 and 2000). Issues related to the impact of government initiatives on SMEs include attitudes of the banking sector towards investment in SMEs (Berger & Udell 2008); policy developments by western governments into the sector and the roles of government advisers when interacting with free enterprise (Bennett & Robson 2003; Hjalmarsson & Johansson 2003; Mole et al 2009 and 2011; Lambrecht & Pirnay 2005); public sector reforms with regards the responsibilities of public servants towards entrepreneurial activities (Merton 1968; Considine 1993); the need for executives in SMEs to focus on core business activities (Merton 1968); the impact of public sector burdens on SMEs (Carroll 2008); and changes in ministerial responsibilities (Considine 1993).

This prior research has revealed significant attention by governments to assist SMEs, especially in the United Kingdom and Western Europe. "Britain provides an important example with international interest because it has experimented with a range of different policies" (Bennett, in Blackburn & Schaper eds. 2012, p 187). Characteristics of such attention has been continuous changes in policies and a complexity of government departments, agencies and

outsourced service providers delivering the programs. SMEs experiencing such changes can be confused about programs and their benefits, which does not auger well for opinions about their value. Seminal work evaluated public support measures for private external consultancies to SMEs in the Walloon Region of Belgium. It found confusion: “a profusion of support services, which led to confusion, a lack of conceptual integration of services, the exclusion of certain categories of SMEs, and adverse selection where the consultants push forward their own solutions.” (Lambrecht & Pirnay 2005, p. 89). It recommended the implementation of the neo-Austrian approach where adverse selection of assistance programs is avoided, and that the needs of the entrepreneurs and SMEs are determined in collaboration with public sector operatives.

Consider investigation of SMEs in the *defence* sector. Governments of all persuasions at national and state levels are sensitive to the importance of the defence sector. They provide assistance programs for SMEs to maximize their participation in contracts, develop their profitability and minimize any adverse effects on the economy, should the sector experience a down-turn in activity (Defence White Paper 2009). The majority of assistance programs in Australia are delivered from agencies such as Austrade, AusIndustry and Enterprise Connect, an in some instances via industry associations such as the Australian Industry Group and various Chambers of Commerce and Industry. Table 3 lists the assistance programs commonly used at the time of the research. Periodically, individual programs are launched for specific economic or political reasons. The defence sector in Australia, and more specifically in South Australia, is a significant employer and well supported by government initiatives (Enright & Roberts 2001). Most employees in this sector are highly qualified technologists, engineers and professionals. So the sector could be attractive for government involvement. Firstly, this industry group is highly experienced in dealing with governments because governments are the major customer for their products. Secondly, this sector has a strong and cohesive industry association, The Defence Teaming Centre which has a modus operandi for utilizing government funding wherever possible. Thirdly, the defence sector attracts businesses that are knowledge rich with high growth potential (Dunne & Vougas 1999; Parker & Hartley 2003). Finally, this industry sector has a long and established tradition of being recipients of Government funding for research and development purposes.

Despite their importance, there is a gap about SMEs in the defence sector in Australia regarding expectations and opportunity costs. So four research questions about them deserve investigation:

1. *Why are the SMEs motivated to consider, and then participate in government funded assistance programs?*
2. *Why have opportunity costs occurred from involvement with government funded assistance programs?*
3. *How satisfied are the SMEs with government funded assistance programs?*
4. *How should the SMEs consider future government funded assistance programs, having already participated in programs.*

Methodology:

To examine the four research questions, a qualitative case research methodology (Perry 2012) was used. Twenty-five SMEs in the defence sector were identified and asked to participate in in-depth, face-to-face semi-structured interviews. The first stage of this approach was the conduct of convergent interviews. Convergent interviewing provided a flexible means to allow all issues related to the research problem theory to be identified and explored to allow the

researcher to control some extent the type of information sought (Rao & Perry 2007). In addition, this methodology overcomes the subjectivity inherent in qualitative data by the researcher attempting to always explain answers after each interview, to disprove the emerging explanation of the data (Dick 1990 p. 11).

Interviewees for the convergent research included three profiles of individuals who had an interest in the research topic, combined with a professional involvement in the industry. They were:

- an academic with a background of consulting experience with defence contractors as well as acting initially as a supervisor with this researcher.
- a CEO of a well established SME in the defence sector having a depth of experience with government funded assistance programs,
- a management consultant who provided services to SMES with their applications to government programs for assistance, and
- a management consultant who was a strategist, helping SMEs source venture capital.

Preliminary questioning categorised them into three groups, referred to as clusters. The first cluster had never been involved directly with government funded assistance programs; the second cluster was businesses that have had some experience but decided not to continue pursuing them; and the third cluster was enterprises that were constant utilisers of government funded assistance programs. Two of the initially selected cases could not be included. One of these SMEs had grown beyond SME size, and another cancelled their interview when the interview was about to commence due to un-specified work pressures. Table 1 profiles the physical attributes of the final 23 SMEs. Their names have been coded for confidentiality and security reasons.

To place the research into a context, two clarifications are necessary: a definition for an SME, and a socio demographic profile of the region where the interviewed SMEs operate. The Australian Bureau of Statistics defines a small sized enterprise as having fewer than 20 employees, and a medium sized enterprise as having from 21 to 199 employees (ABS 2002; Brunetto & Farr-Wharton 2007). This definition provides a quantitative dimension to the business segment in the research. *Small to medium sized enterprises* have the following characteristics. They “tend to be independent, multitasking, cash-limited, and based on personal relationships and informality, as well as actively managed by the owners, highly personalised, largely local in their area of operation, and largely dependent on internal sources to finance growth” (Russo and Perrini 2010 p.209). The research was carried out in South Australia, a state in the Commonwealth of Australia. It has an area of 983,482 square kilometres, a population of 1.65 m and has just over 50,000 SMEs. At the time of the research, the Defence Teaming Centre, the industry association from which participating SMEs were sought, had 252 registered members in South Australia.

Table 1: The physical attribute of the 23 interviewed SMEs

	SME	Status of Interviewee	Duration of interview	Duration mean	FTE - employees	FTE mean	Annual turnover (\$m)	Annual T/O mean	Years of Operation	Years of operation mean
Cluster 1 (5)	1-16H	GM	24	29	18	8	3	1.5	10	6.2
	1-06I	MD	34		3		0.5		3	
	1-01Q	MD	35		1		0.2		3	
	1-018K	MD	29		15		3		10	
	1-07S	GM	23		3		1		5	
Cluster 2 (9)	2-05A	MD	30	40.1	10	40	1.6	11	23	19.6
	2-15A	HR	15		200				25	
	2-13C	GM	46		20		3		30	
	2-02D	GM & MD	40		22		5		25	
	2-24H	GM, MD & FO	50		35				25	
	2-10L	GM	35		10		4		12	
	2-03L	GM	60		19		4.5		24	
	2-17S	GM	25		30		40		6	
	2-20T	MD	60		15		18		6	
Cluster 3 (9)	3-08V	GM	35	49.7	24	70	25	23	18	27
	3-11F	GM	68		26		4.5		20	
	3-14C	MD	46		70		20		38	
	3-04E	MD	45		26		6		15	
	3-22P	MD	35		65		10		18	
	3-09R	MD	65		74		74		20	
	3-21S	MD	64		200		55		23	
	3-23S	MD	55		70		6		21	
	3-19W	MD	35		25		7		70	

Source: Table compiled from the research data

Findings:

Consideration is now given to the findings from the research. They are presented under the headings of the four research questions. The semi-structured interviews with the 23 SMEs resulted in a body of data in Table 2.

The first research question was about why SMEs participate in the programs. While businesses often exist to service current business activities (Kotler 2012; Porter 2008), SMEs involved with defence contracts are continuously seeking new opportunities. However, because they are small, and defence projects complex, they might lack the necessary capital, internal resources, expertise or associates to successfully pursue these (Engin & Koc 2010). So they might seek assistance from external parties such as government funded assistance programs to help with the pursuit of new commercial activities. The analysis of market development across the three clusters shows a connection between ownership, market development and an involvement in programs, and that those businesses with an on-going involvement in them were large enough to be able to allocate sufficient resources to the application for, and management of the same.

Table 2: Summary of the number of comments and discussions in the 23 interviews

	SME	Expectations	Opportunity Costs	Satisfaction	Participation in Future Programs
Cluster 1 (5)	1-16H	1	3	1	
	1-06I	2	1	3	1
	1-01Q	1			
	1-18K	2	3	2	
	1-07S				
	Sub-total	6	7	6	1
	Mean	1.3	2	2.5	0.4
Cluster 2 (9)	2-05A	3	5		
	2-15A	1	3	2	
	2-13C	2	1	1	
	2-02D	3	3	1	
	2-24H	1	1	5	1
	2-10L	1	2		
	2-03L	3		5	1
	2-17S	1	2	3	1
	2-20T	1	12	8	
	Sub-total	16	29	25	3
	Mean	1.8	3.3	4.2	0.7
Cluster 3 (9)	3-08V	3	6	4	
	3-11F	4	1	2	1
	3-14C	2	3	9	3
	3-04E	2		1	
	3-22P	1	1	9	1
	3-09R	6	6	10	1
	3-21S	2	4		
	3-23S	2	12	3	1
	3-19W	2	1	11	4
	Sub-total	24	34	49	11
	Mean	2.3	4.3	6.3	1.1
Total	46	70	80	41	

Source: Table compiled from the research data

Consider the SMEs' expectations of participation. A total of 46 comments and discussions were tabled about this from the interview data. The third cluster – the most experienced in the programs - had most expectations of participation. The average number of references per business in cluster 1 was 1.3, for cluster 2 businesses the average was 1.8, and for cluster 3 businesses it was 2.7. The predominant expectations were for assistance with market development, the need for additional capital to expand and develop the business, support for operational cash flows, support to develop business capabilities in operations and management, help with funding for research and development, assistance to protect the owner's equity in their enterprises, learning specifically about how programs operated, and a desire to have their businesses appraised by an independent third party. To a lesser extent, expectations were expressed for assistance with risk management practices, the development of relationship with government agencies, the acquisition of new plant and equipment, assistance specifically tailored for smaller SMEs, benchmarking, training and professional development and industry accreditation. This situation confirms findings of Bennett (2007) where he reported on a survey of Business Link clients in Britain to identify the main expectations that SMEs had in their assistance services. He reported a wide and conflicting range of expectations, with the main one being for government advisers to provide a detached view of operations, and to act as a sounding board.

Next, consider the second research question about the opportunity costs that might have occurred as a consequence of an involvement with government funded assistance programs. A total of 70 comments and discussions were tabled about the issue from the interview data. The average number of references per business in cluster 1 was 2. For cluster 2 businesses, the average was 3.6, and for cluster 3 businesses it was 4.3. The fundamental driver behind the research into government funded assistance programs is their effectiveness and the quality of the outcomes, and so SME experiences with opportunity costs were examined. The significant opportunity costs identified were around administration of their applications for, and the management of their involvement in programs, distractions from core business activities, the management of time, an impact on the businesses finances, and restrictions on market place activities. A lesser group of opportunity costs involve expenditures for the protection of intellectual property, expenditure of resources for the development of knowledge about the programs including interaction with industry peers, and time spent with government representatives. These findings are in line with the results of research into the decentralization of Business Link services in Britain in 1993 (Bennett in Blackburn & Schaper, 2012, p. 192), with references such as a waste of company time and lost us business. One business in cluster 2 and another in cluster 3 provided extensive commentaries about opportunity costs where participation in programs had an impact on the utilization of administrative and financial resources. However, in both instances the managing directors were strong supporters of government funded assistance programs and expressed a desire for future participation should such programs be made available.

The third research question was about SME satisfaction with government funded assistance programs. A total of 80 comments and discussions were tabled about this issue from the interview data. The average number of references per business in cluster 1 was 2.5. For cluster 2 businesses the average was 4.2, and for cluster 3 businesses it was 6.3. Though there was some degree of concern that direct contact between SMEs and the representatives of programs could cause opportunity costs, the majority of interactions were seen in a positive light, especially from those businesses that had established working relationships with business advisers from AusTrade, Enterprise Connect and AusIndustry. Refer to table 3.

Four businesses from cluster 2 and seven from cluster 3 had participated in a business review exercise provided by Enterprise Connect for no financial outlay. With the exception of one business, there was a high level of satisfaction with this third party appraisal service. The exception was a cynical comment about the motives of the business advisers, concerned that they were more interested in personal KPIs within their programs, and less in the needs of the client. Overall was the high level of satisfaction regarding the benefits from applying for a government funded assistance program, where the process made the SMEs closely examine their operations and performance.

Table 3 Contacts between SMEs and representatives of government funded assistance programs.

Agency / Department		Positive	Negative
Australian Government	AusIndustry	7	4
	Austrade	1	
	Enterprise Connect	8	2
	Other	5	2
South Australian Government	SAIIF	4	6
	Other	8	4
Industry Association	Defence Teaming Centre		2

Source: Compiled for this research from the interview data

This third research question also incorporated opinions held by SMEs in government agents and operatives of government funded assistance programs. Evidence demonstrated that the wide variety of assistance programs and the demands for confidential company data in the application processes could, in itself, be a cause of concern for SMEs. In this process valuable resources were expended for both activities. The process of the Enterprise Connect business review with the use of the diagnostic tools PROBE™ (QSR International, 2014) or Winning Measures™ (Winning Moves Ltd 2014) revealed that the Australian Government was sensitive to this issue. These diagnostic tools generated sufficient data on the business operations by which Enterprise Connect could allocate grants of up to \$20,000 on a matched funding basis for services provided by independent management consultants. None of the SMEs who experienced these services raised the confidentiality of their data as a point of contention. No other issues about a lack of confidentiality were raised by any of the interviewees across all of the three clusters.

Finally in this research question on satisfaction in the programs, the questioning explored for evidence about levels of interaction between SMEs and the program agents and representatives. The research concluded that there were high levels of trust held by the SMEs, with positive comments out-weighing the negative comments. The most significant finding was the high levels of confidence expressed by the SMEs in the program representatives, specifically around the business advisers employed by Enterprise Connect, noting that 13 of the 19 cluster 2 and 3 businesses had participated in the business review process in the three years prior to the conduct of the interviews in late 2012.

The fourth research question was about consideration of an involvement in any future government funded assistance programs. A total of 14 comments and discussions were tabled from the interview data. The average number of references per business in cluster 1 was 0.25 For cluster 2 businesses, the average was 0.33, and for cluster 3 businesses it was 1.1. Of the nine businesses in cluster 2, eight gave the lack of available time as their main reason for not participating in future programs. The ninth claimed that their good financial performance had taken them beyond the thresholds of programs. All of the cluster 3 businesses demonstrated

positive levels of satisfaction in programs and stated that any future participation would only occur after careful consideration of the costs and benefits.

Conclusion:

Table 4 summarizes the full range of conclusions and their contribution to the literature. A *high* level contribution comes from a finding in this research that has not been made before about opportunity costs and government funded assistance programs. That is, this contribution is new to this area. In turn, a *medium* level contribution is an empirical one that adds to existing literature about opportunity costs and SMEs that has not been rigorously tested before. Finally, a *low* level contribution is a finding from this South Australian research confirms the already established literature about opportunity costs for SMEs and the programs elsewhere.

In summary, this case research found that concerns raised by SMEs that their participation in government funded assistance programs were un-warranted. With the cluster 1 businesses, they were unable to participate for three reasons. Some were too small and did not qualify due to thresholds stipulated by the funding bodies, others were unable to allocate the necessary resources required to apply in the first place, while others were unable to provide the matched funding requirement by many of the programs. With cluster 2 businesses, time constraints were the main reason for non participation in future programs following initial an involvement. All of the cluster 3 SMEs, continual users of programs, demonstrated a need to rationally consider their participation in future programs in their intentions. They can be described as *opportunistic* with government funded assistance programs. However, several of these businesses acknowledged that in the main they were well enough established not to need external assistance, and that in their opinion, assistance would be better directed to mid-sized enterprises that in the words of one of their high profiled executives, needed a ‘hand up’ not a ‘hand out’.

This research will assist in filling a gap in the literature where policy makers and participants alike will be provided with evidence about the nature and impact of government funded assistance. Governments have a responsibility to constituents to justify expenditures of public funds (Guellec & De La Potterie 2003). Policy makers will benefit through the presentation of evidence related to an area of high expenditure. They will be able to justify or otherwise their intentions and administrative practices respectively when proposing, planning and implementing assistance programs for SMEs. Conversely executives in the enterprises will have an instrument to assist them in their decision making, with signals raised for them to be cautious when allocating their resources to participation.

In conclusion, all SMEs engaged in government funded assistance programs could incur fewer opportunity costs, enabling the benefits of their involvement to more closely match their expectations.

Table 4 **Conclusions and the level of contribution**

Research issue	Conclusions	Contribution
RI 1 Expectations Section 5.2.1	Conclusion 1: Assistance with business operations was the dominant theme to emerge. Conclusion 2: SMEs that were owned by larger corporations were constrained in their access to programs, and SMEs that were privately owned had a mindset to preserve their ownership. Conclusion 3: Assistance was desired to under-pin cash-flows, and for the purchasing of new plant, equipment and infrastructure. Conclusion 4: A desire to grow business activity and profitability are fundamental to the entrepreneurial spirit of SMEs in the defence industry.	High Low Medium Low
RI 2 Opportunity costs Section 5.2.2	Conclusion 5: Opportunity costs around business operations do not appear to be significant for the majority of SMEs Conclusion 6: The irregular receipt of assistance funds had an impact on cash-flows. Conclusion 7: The impact of programs on marketing activities was minimal Conclusion 8: The interaction with other parties around government funded assistance programs can be regarded as an opportunity cost	High High Low Low
RI 3 Satisfaction Section 5.2.3	Conclusion 9: Management become more aware of their business operations and performance through the assistance of third parties such as program representatives and independent management consultants. Conclusion 10: Participation in government funded assistance programs can be effectively used in marketing strategies. Conclusion 11: High levels of satisfaction in the availability of third party resources to assist in the appraisal of business operations and strategies. Conclusion 12: There is value in having government funded assistance programs specifically structured to assist SMEs in the planning and crafting of their strategic directions.	High Low High High
RI 4 Future participation Section 5.2.4	Conclusion 13: Onerous criteria, and changes in criteria are a concern for participation in programs. Conclusion 14: Larger and more established SMEs that are constantly looking for opportunities to enhance their businesses see government funded assistance programs as a valid component of their business practice Conclusion 15: Smaller SMEs expressed a desire for financial support, whereas larger and more established SMEs strategically planned to secure such support. Conclusion 16: Larger and more established SMEs demonstrated a strategic approach to utilizing government funded assistance programs within their business plans. Conclusion 17: The need to focus limited resources on core business activities and to avoid the distractions caused by the application processes.	High Medium High High High

Source: developed for this research

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Survival of Entrepreneurial Firms: The Role of Agglomeration Externalities

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Survival of Entrepreneurial Firms: The Role of Agglomeration Externalities

Abstract

This paper analyzes the role of various types of agglomeration externalities on the survival rate of newly established entrepreneurial firms. This is done by tracking the population of newly-established Swedish firms in Knowledge Intensive Business Service (KIBS) sectors from 1997 to 2010. We find that only Jacobs' externalities (diversity) positively affect the survival of entrepreneurial firms. In particular, the higher the related variety of the region in which an entrepreneurial firm is founded, the higher will be the survival chance of the firm. The result is robust after controlling for extensive firm characteristics and individual characteristics of the founders. The main message here is: for a newly-established entrepreneurial firm, not only it matters who you are, but also where you are.

A Case Study on Korean Direct Investment in Large-scale Agricultural Land in Cambodia

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A Case Study on Korean Direct Investment in Large-scale Agricultural Land in Cambodia

Principal Topic

Scholars have conducted considerable academic and empirical studies on the nexus between foreign direct investment (FDI) and local development in the recipient countries. The majority of studies focuses on the impacts of the FDI on local development by focusing either on the monetary terms of FDI or on the perspective of local community. FDI in the literature has been written about as a phenomenon, which in fact it is and it consists of persons – the investors who make decisions and may directly run the FDI firms in the host countries.

However, there is little or no literature on the perspective of the investors. To better examine the impacts of FDI on local development and to suggest more suitable policies or strategies for the recipient governments, it is equally important to study the FDI investors who can play a vital role in the relationship between FDI and local development. They are the ones who make decisions and influence investment plans and activities.

In terms of new firm creation, scholars have acknowledged that entrepreneurs significantly contribute to economy and society through wealth creation and employments (Rindova, et al, 2009; Reynolds, 2005; Matlay, 2005). Therefore, according to the countless debates about the impacts of FDI on host countries, a question worth asking is to what extent the FDI investors act as entrepreneurs.

This PhD research aims to contribute to narrowing these knowledge gaps by taking a social approach to the FDI field of study - incorporating the concepts of entrepreneurship, stakeholder relation and embeddedness. Through these theoretical lenses, the research investigates in what way and to what extent South Korean FDI investors; who are second largest investors in the country; act as entrepreneurs by performing their entrepreneurial activities in large-scale agricultural land investments in Cambodia. The research further explores how Korean investors contribute to rural development in Cambodia.

Methodology

The research employs comparative case studies. Three Korean FDI companies, who are economic land concessionaires for rubber plantation in Cambodia, were selected to explore Korean companies' investment behaviors. The research employed various tools to collect ethnographic data on entrepreneurial activities, relations with stakeholders of the Korean investors and their embeddedness in the local communities such as interviews, focus group discussions, participatory observations, indirect observations, conversations, field notes and documentary analysis.

Regardless of the various data collection techniques, in-depth interviews with individual informants were the main technique used for this study. Conducting the three case studies, this research was carried out in multiple settings ranging from a very formal one to a very casual one such as offices, plantation sites, worker campuses, farmers' fields, houses, kitchens, stores, coffee shops and roads.

The current paper presents one of the three case studies demonstrated in the whole PhD dissertation. This is a case study of a Korean company that has been officially granted the rights to cultivate 7,500 hectares of land for the period of 70 years in a rural area in

Cambodia. This case study is mainly constructed of data collected from in-depth interviews, focus group discussions, participation observations and field notes during 2012. The empirical evidence of the case study is framed by and discussed according to the conceptual framework presented in literature review chapter of the dissertation. The framework is used to guide whether the foreign investor from this company performs as entrepreneur and attempts to engage himself in the local communities and if so, how successful his attempt is and what challenges he faces in his engaging process.

The case study introduces the company's founding owner and his perspective on managing the business as a foreigner in this least developed country. Moreover, this case study provides an in-depth understanding of the company's operational activities in the land concession and how the owner as well as the company interacts with their stakeholders in the local community. Impacts of the foreign direct investment on local communities from each stakeholder's standpoint is also highlighted.

Results and Implications

The findings of this case study suggest that the Korean founding owner performs entrepreneurial activities throughout the FDI investment and operational process. He is good at opportunity recognition, development and evaluation. He has lengthy experience in organizing new company and management. In addition, he is alert and flexible to changes as he promptly managed to adjust the whole management system to fit with the real situation and challenges. He can be classified as a portfolio entrepreneur defined by Westhead and Wright (1998) as he is found to repeat his new business formation and currently owns three active businesses in Cambodia and one in Korea.

The findings further suggest that the Korean FDI investor has gradually engaged himself with the local context to capitalize on local know-how and to enable smooth FDI operation. However, his attempt is not fully successful due to differences in cultures and expectations from both the investor and the context. To some extent, the local community benefit directly and indirectly from the Korean FDI firm through job and business opportunity creations as well as infrastructural contributions. However, the findings underline that divides among stakeholders can prevent them from maximizing the benefits from the investment. The Korean investor and the local communities are obviously losing lots of benefits due to the lack of secure land tenure and no prior consultation with local communities in regards to granting the economic land concessions in the local community.

Determinants of Technology Rates of the Nations – An Exploratory Study

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Determinants of Technology Rates of the Nations – An Exploratory Study

ABSTRACT

Some countries create Patents and export technology at a greater rate than others do. This study explores the technology output determinants affecting the *change per annum* or D of a country's technology balance-of-payments. Broadly categorised, they include *change per annum* or D of public sector and enterprise research and development expenditure, and of the number of Patents and researchers. The findings of this study on a sample of 34 OECD and 7 non-OECD countries reveal distinct sets of determinants influencing the magnitude of the D of Patent creation and TBP at the industry, country and regional levels. The study offers an initial set of models for government, higher education and business decision-makers to predict or engineer their country or region's Patents and technology export growth rates.

INTRODUCTION

[Furman, Porter, and Stern \(2002\)](#) introduce the concept of a country's capacity to commercialise a continuous output of innovative technologies over the long term. Technology output variations across countries are dependent on the number of researchers, research and development or R&D expenditure, IP protection choices, openness of international trade, the degree of technological specialisation, and lastly a country's knowledge reserve or stock. However, technology either advances or stagnates. The Furman study utilises yearly statistics and does not evaluate a country's *change per annum* or D in its innovative capacity. This study attempts to provide models for the technology progress of European and non-Europe countries using the D perspective. Current macro innovation-metrical studies also lack comparative industry TBP analysis.

Countries *export* and earn from marketing their technologies overseas and purchase or *import* foreign technologies to supplement their own technologies ([Gassler & Nones, 2008](#)). Technology receipts depend on a country's R&D effort or 'know-how' and correspond to foreign sales of the marketable results of that effort. Technology receipts less payments equal technology balance-of-payments or TBP. [Mendi \(2007\)](#) suggests TBP as a credible measure of one's international trade in technology. The author employs DTBP as a measure of technology progress at the country, region and industry level.

The study adopts the endogenous growth theory – a view where economies never attain a steady state due to increasing rates of return on Human Capital ([Lucas, 1988](#); [P. M. Romer, 1986](#)). Skills and knowledge of workers increase unlike physical capital that depreciates in value. [D. Romer \(1996, p. 95\)](#) states, "the driving force of growth is the accumulation of knowledge where capital accumulation is not central to growth." Another model counters Romer claiming that technological progress is not sustainable indefinitely without the accumulation of capital utilised in R&D that creates innovations and their associated production processes. "Capital accumulation cannot be sustained indefinitely without technological progress to offset diminishing returns" ([Howitt & Aghion, 1998, p. 112](#)). [Pouder and St. John \(1996\)](#)'s industry growth-decline model claims that economies of agglomeration or increasing concentration, institutional factors, and managerial perceptions initially create an innovative environment but gradually create uniformity smothering innovation in a locality. These models suggest determinants that influence country, regional or industry growth or decline in TBP and Patent creation.

An agglomeration of production facilities, specialised suppliers and labour within a locality may lead to a self-sustaining process of increasing benefits including inadvertent knowledge

sharing ([Arthur, 1990](#); [Krugman, 1991](#); [Storper, 1989](#)). Thus geographic proximity facilitates new knowledge creation and commercialisation of technology amongst neighbouring countries ([Audretsch & Feldman, 2004](#)). [Saxenian \(1996\)](#) refutes this claim stating how proximity is insignificant when compared to the aptitude of firms to adapt to rapidly changing markets and technology. She asserts how informal communication and collaboration amongst Silicon Valley's firms with their suppliers, customers, trade associations and universities, a regional network-based industrial system, promotes entrepreneurship and experimentation, learning and mutual adaptation among specialised technology producers ([Saxenian, 1996, p. 45](#)). The varying technology outputs of regions may arise from varying levels of contribution or effort by public institutions and business enterprises. The author posits distinct sets of determinants that significantly affect the DTBP and DPatents of technology clusters.

[Hsu and Ziedonis \(2007\)](#) suggest that having larger patent stocks increases both the likelihood of sourcing capital from prominent venture capitalists and through initial public offerings. [Grant \(1996\)](#) posits that knowledge is the most critical organisational asset determining superior firm performance. This study also investigates the determinants of the D of Patent creation – a proxy for knowledge accumulation and firm performance at the country, regional and industry level, over time. Patents created by researchers using R&D capital are knowledge constituents that generate new technologies and products over time. This study proposes models of how DPatents, Dresearchers and DR&D expenditures affect DTBP at the country, region and industry level. Findings may be useful in predicting or engineering a country's Patents and technology growth rates.

DATA, RESEARCH QUESTIONS AND METHODS

The Furman study ranks the innovative capacities of countries based on yearly technology outputs from 1973 to 1996. The Pouder-St.John and Howitt-Aghion models suggest growth or decline in TBP. This study provides a current country ranking using D or *change per annum* of TBP and DPatents as dependent variables or technology outputs. The first research question is which countries have DTBP that are highly positive or highly negatively relative to others? How many technology regions are there? The method employed is cluster analysis. The second research question is two-fold: what inter-relationships exist amongst the technology outputs and their determinants for each identifiable technology cluster? The author identifies these factors using Principal Component Analysis employing Varimax rotation with Kaiser Normalization.

This study assumes the relatively unchanging nature of a country's IP protection regimes, openness of international trade, and the degree of technological specialisation. The author assumes a country's total DTBP and D of regional, PC, Electronics and Optics or PEO and Bio-pharma related Patents changing linearly over time. Industry-specific DTBP namely DTBPPEO and DTBPPHM measures the technology output of industry-specific Patents, researchers and R&D expenditures. Their determinants also grow or decline linearly over time. They are the D of enterprise, government and higher-education R&D expenditures and researchers, and Patents. Refer to Table 1 for descriptors.

Insert Table 1 about here

The OECD on-line statistics repository URL: stats.oecd.org/index.aspx?queryid=38899, Science, Technology and Patents folder, Science and Technology Indicators subfolder provides all the relevant data from year 2000 to 2012. MS Excel calculates the regression gradients or the D of TBP, TEXP, TIMP, TBPPEO, TPEOEXP, TPEOIMP, TBPPHM, TBPEXP, TBPIMP,

BERDTOT, BERDPHM, BERDPEO, GVERD, HERD, GERDHR, BRDHR, HERDHR, INDHR, ICTPAT, BIOPAT, MTECPAT, PHMPAT, PCTPAT, EPOPAT, and TRIPAT for 26 European and 15 non-European countries.

Saxenian's network model suggests a high level of collaboration between business enterprises and public sector and higher education institutions leads to a high level of technology output. The third research question is which technology inputs or determinants significantly affect the country overall or total DTBP, DTEXP, and DTIMP? The study's fourth research question is which technology determinants significantly affect DTBPPEO and DTBPPHM, the DTBP of the PEO and Bio-pharma industries respectively, DICTPAT, DPHMPAT, DMTECPAT and DBIOPAT. Multiple Regression identifies the significant determinants and their magnitude of effect on DTBP and DPatents. H_0 : regression betas of technology determinants are not significant; H_1 : regression betas of technology determinants are significant. SPSS v20 performs Cluster Analysis, Principal Component Analysis and Multiple Regression.

ANALYSIS AND RESULTS

Based on DTBP, DTEXP, DTIMP, DTBPPEO, DTPEOEXP, DTPEOIMP clusters, the author identifies the Non-European region consisting of Australia, Argentina, Canada, Chile, Israel, Mexico, New Zealand, Singapore, South Africa, Turkey, and the United States, inclusive of China, South Korea, and Taiwan being regional technology leaders. A second region is identified based on DTBPPHM, DTBPEXP, and DTBPIMP clusters. Western-Nordic Europe or WN-EU region consists of Austria, Denmark, Finland, France, Iceland, Luxembourg, The Netherlands, Norway, Sweden, and the United Kingdom inclusive of Germany, Switzerland, Ireland and Belgium as major Bio-pharma technology exporters. Japan, Russia, and the US appear increasingly dependent on foreign Pharmaceutical technology. Though not apparent in table 2, the author identifies a third East-Southern Europe or ES-EU region consisting of Estonia, Greece, Hungary, Italy, Poland, Portugal, Slovenia, Spain, Romania and Russia inclusive of the Czech Republic and Slovakia as promising PEO technology exporters.

Insert Table 2 about here

From historical 1973 to 1996 'Patents per Capita' data, Furman et al. classify the US and Switzerland as top-tier resulting from increases in full-time scientists, R&D expenditure, improvements in IP protection and market openness, and a high share of R&D performed by industry. They observe a steady progress by countries with historically lower technology levels namely Japan, Germany, and Sweden, joining the top-tier during the 80s. A mid-tier group includes the Nordic countries, France, and UK, with Denmark and Finland making substantial gains in their innovative capacities ([OECD, 2006](#)). The DTBPT (total 2000-2012) perspective positions Germany and Japan as top-tier, with Israel, the Netherlands, Sweden, and the UK as mid-tier. The DPatents perspective identifies Germany, the UK and the US registering negative growth. The DICTPAT and DPCTPAT of China, Japan and South Korea are the most positive. From the DR&D expenditure and Dresearcher perspectives, China, Japan, South Korea and the US clearly dominate the technology arena.

[Avallone and Chédor \(2012\)](#) reveal countries with particularly high levels of R&D always registering positive TBP; they are technology net exporters. They also observe countries leading in R&D expenditures both export and import more technology than countries that do not invest heavily in R&D. The high DTBP and DR&D expenditures of China, South Korea and Taiwan reinforce Avallone and Chédor's observations. When technology payments exceed

receipts, a country's TBP is in deficit. However, a growing TBP deficit may indicate an over-dependence on foreign technology.

Only the highest factor loading were considered in obtaining the factors ([Costello & Osborne, 2005](#)). Several variables had cross-loadings greater than 0.4 very likely indicating a small but unavoidable sample sizes of 15, 14 and 12 on the Non-EU, WN-EU and ES-EU regions respectively. Only the first two principal components relating to the all three regions consist of both technology outputs and determinants. Table 3 contains all relevant factor loadings.

Insert Table 3 about here

DICTPATs of all three regions are noticeably related to their DTBP or DTEXP. DBERD total and DBRDHR are also related to DTPEOEXP or DTBPPEO. This may indicate intensifying competition in the global PEO industry. The WN-EU and Non-EU regions have a similar latent variable linking the D of PEO technology exports and imports with the D of government, enterprise, and higher-education researchers, and the D of R&D expenditures by the PEO industry and government. This may indicate relatively stronger collaboration between the public, private and higher-education sectors in the PEO industry. DTBP of Non-EU relate to DICTPAT and DPCTPAT, whilst the DTBP of the WN-EU and ES-EU regions relate to DBIOPAT and DICTPAT, DBIOPAT and PHMPAT. This may indicate each region as having its own knowledge-based competitive advantage.

Non-EU region's DTPHMEXP and DTPHMIMP critically depend on the D of HERD, Biopharma industry R&D expenditure and DBiotech Patents. In stark contrast, the D of regional and industry-specific Patents of the ES-EU region are very likely generated by the D of higher-education researchers underpin its DTPHMEXP and DTPHMIMP. The WN-EU and ES-EU regions have DBERDPEO, DBERDPHM noticeably unrelated to any of its DTBP related outputs. The WN-EU and ES-EU regions have their D of industry employment as noticeably related to DTPEOEXP and DTBPPEO. This suggests contributions to regional technological progress by non-researchers, unlike the Non-EU region.

Table 4a contains the regression betas of significant determinants of DTBP, DTEXP and DTIMP. There were no significant determinant affecting TBP of all countries, and the WN-EU and Non-EU regions. However, the D of higher-education researchers and R&D expenditure, and the D of Triadic and PCT Patents positively affect DTBP of the ES-EU region. Surprisingly, its business enterprise researchers negatively affect to technology exports and R&D activities utilising technology imports. Table 4b compares WN-EU's DTEXP with Non-EU's DTIMP. Biotech Patents support WN-EU DTBP.

Insert Tables 4 about here

The D of higher education researchers, enterprise and government R&D expenditure, Biotech and Medical Technology Patents positively relate to the DTIMP of the Non-EU region. Refer to table 5b. "Over 60% of such technology transfers in the major countries are between parent companies and their affiliates" ([OECD, 2006, p. 130](#)). In advanced economies or countries, innovation engineers growth through high-technology products ([Sachs & McArthur, 2002](#)) or 'new-to-the-world' products in new global markets. Developing countries may grow through utilisation of economies of scale and scope by large firms and by rapidly absorbing the advanced technologies and capital of the highly developed countries via technology transfer

from high-tech multinationals ([Hewitt-Dundas, Singh, Yuen-Ping, & Kam, 2010](#)). Therefore, a country or region's DTIMP may signal economic growth or competitiveness.

Table 5 show the different significant determinants of DTBPPEO, DTPEOEXP, and DTPEOIMP for each region. Higher education R&D expenditure negatively affects the DTPEOEXP of ES-EU and Non-EU regions. WN-EU government R&D expenditure negatively affects its DTBPPEO in contrast to the other two regions. This finding may validate a claim by [Cooke \(2001\)](#) of Europe's innovation gap with US is its reliance on public intervention indicating market failure of simplest kind. For the Non-EU region, DBERDPEO slightly affects its DTPEOIMP. DBERDPEO is not significant towards WN-EU's DTBPPEO. Principal component analyses on the three regions reveal a somewhat homogeneous global PEO industry. Multiple regressions complement these findings. DICTPAT, DBRDHR, DBERDPEO, DGVERD and DHERD positively affect the DTPEOEXP of 41 countries.

Insert Tables 5 about here

It is different situation for the models for DTBPPHM, DTPHMEXP and DTPHMPIMP. The best fit occurs without the three most highly negative DTBPPHM countries namely Japan, Russia, and USA. WN-EU's DTBPPHM is distinct from those of the Non-EU and ES-EU regions. DBIOPAT is more critical for WN-EU's Bio-pharma technology exports whereas DPHMPAT and DMTECPAT is critical towards Non-EU and ES-EU's DTPHMEXP. All Dresearchers, DR&D expenditure and D Bio-pharma Patents significantly affect ES-EU's DTBPPHM whereas only Dindustry-employment and DBIOPAT affect WN-EU's DTBPPHM. This suggests a high level of collaboration between business enterprises and public sector and higher education institutions in the ES-EU region. This study reveals DBERD as positively related to DTBP and DTBPPEO. Surprisingly, DBERDPHM is not significantly related with DTPBPHM. This suggests different strategies for the two industries.

Insert Tables 6 about here

Lastly, determinants of DPatents of the three regions differ greatly. Table 7 showcases only DPatents with significant regression betas. DTRIPAT, DEPOPAT and DPCTPAT for the WN-EU and ES-EU regions have no significant determinants whereas D of regional Patents for the Non-EU region have. Refer to Table 7b. Surprisingly DBERDPEO, DBERDPHM and DBERDTOT do not significantly affect any DPatents but rather Dresearchers! Assuming the DPatents as a proxy for firm performance over time is true, these findings highlight distinct knowledge based competitive advantages for each region and agree with the cluster analyses.

Insert Table7 about here

IMPLICATIONS AND FUTURE RESEARCH

As it is in a race, one has to speed up to catch up with one's competitors as the examples of China and South Korea illustrate. With the US and others exhibiting negative DTBP, these countries may become top-tier PEO technology leaders. This may also indicate the challenging task of maintaining one's technological leadership. A country must substantially increases its Patent reserve due to patent expiration and a small percentage of Patents being of any commercial worth. Towards this endeavour is the critical task of growing the number of researchers. Few studies analyse the growth/decline rates of TBP and Patent creation at the country, regional and industry level. This study offers initial models to policy-makers of the quantitative effects the determinants have on the 'technology speed' to achieve a specific TBP

level. Why certain determinants or change per annum of Patents, number of researchers, and R&D expenditure positively or negatively affect the growth or decline of TBP or why certain determinants are not significant remains unanswered.

This study assumes a constant increase or decrease in DPatent, R&D HR and R&D spending PA. However, regression R^2 varies from 0.01 to 0.99. This may be due to secondary data sources contain estimations. Future studies should strive to fill in missing data and/or obtain more accurate data. Some trends reveal countries ‘accelerating’ or ‘decelerating’ or exhibiting positive or negative changes in their ‘technology speed’ in the short run or over a few years. Future studies should investigate this phenomenon more closely. The change per annum of country and industry technology inputs and outputs of other time periods for example the 90s should contrast with the 2000-12 period contained in this study.

The levels of foreign direct investment from high-tech multinationals and overall education spending are not included in the study. Studies suggest that R&D subsidy schemes have a positive effect on firm performance ([Klette, Møen, & Griliches, 2000](#)). Future studies should include the effect of R&D subsidies on change per annum of TBP and Patents. Despite these limitations, the models clearly highlight the critical roles of R&D personnel and expenditure that generate Patents and subsequently generate technology receipts. These models do not recommend specific ways to improve the efficacy nor efficiency of R&D processes. Future research must delve into innovation systems related factors underpinning specific configurations of public-private sector collaborations that facilitate TBP growth.

[Saxenian \(1996, p. 45\)](#) asserts how the Route 128 region is in stark contrast to Silicon Valley with its secrecy and corporate loyalty relations amongst firms, customers, suppliers, and competitors, encouraging a regional culture of stability and self-reliance. Future studies should perform comparative studies on regions, countries or industries that exhibit drastic change per annum differences that include measures of open innovation. The rate of improvements or deterioration of a country’s supportive cluster environments ([Porter, 1998](#)) should also be measured. Knowledge spill-over occurs with multinationals gaining knowledge from regional innovation system stakeholders ([Andersen & Christensen, 2005](#)). How the great variation of knowledge spill-over from country to country is still largely unexplained ([Audretsch & Feldman, 2004](#)) warranting its inclusion into future ‘technology speed’ innovation-metrical studies.

Comparisons between engineering-based and science-based industries ([Asheima & Coenen, 2005](#)), for example the Aerospace and Construction industries versus the IT and Biotechnology should be made. The TBP of textile industries of Italy and Spain requiring specialised skills and knowledge Non-patent oriented industries should contrast with patent-intensive industries. Further research should also ideally encompass other high-technology industries for example Nanotechnology.

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Table 1: Glossary of Study’s Technology Related Variables Acronym

ACRONYMS	Technology Outputs Variable Descriptors <i>Change per annum or D of, in million current dollars</i>
DTEXP	Technology exports
DTIMP	Technology imports
DTBPT	Technology balance-of-payments or TBP
DTPHMEXP	Technology exports of the Pharmaceutical industry
DTPHMIMP	Technology imports of the Pharmaceutical industry
DTBPPHM	Technology balance-of-payments of the Pharmaceutical industry
DTPEOEXP	Technology exports of the PC, Electronics and Optics or PEO industry
DTPEOIMP	Technology imports of the PEO industry
DTBPPEO	Technology balance-of-payments of the PEO industry
DTBPAR	Technology balance-of-payments of the Aerospace industry
	Technology Outputs Determinants Variable Descriptors <i>Change per annum or D of the number of, full-time equivalent</i>
DGERDHR	Government researchers
DBRDHR	Business enterprise researchers
DHERDHR	Higher education researchers
DINDHR	Industrial employment, in thousands
	<i>Change per annum or D of R&D expenditure by, in million current dollars</i>
DGVERD	Government, intramural
DHERD	Higher Education
DBERDTOT	Business enterprise, country total
DBERDPHM	Business enterprises of the Pharmaceutical industry;
DBERDPEO	Business enterprise of the PC, Electronics and Optics or PEO industry
	<i>Change per annum or D of the number of Patents by technology domain; inventor(s)'s country(ies) of residence and by priority date; Patent applications filed under the PCT</i>
DICTPAT	PC, Electronics and Optics or PEO
DBIOPAT	Biotechnology
DPHMPAT	Pharmaceutical
DMTECPAT	Medical Technology; Patent applications filed under PCT <i>D PA of the number of, filed by priority year</i>
DTRIPAT	“Triadic” Family; Patents filed in the European Patent Office or EPO, the Japan Patent Office or JPO and the United States Patent and Trademark Office or USPTO
DEPOPAT	European Patent Office or EPO Patents
DPCTPAT	Patent Cooperation Treaty or PCT Patents

TBP statistics include patent purchases and sales, licenses for patents, ‘know-how’ or unpatented knowledge, models and designs, trademarks including franchising, technical services, and finance of industrial R&D outside national territory. The OECD explicitly excludes from TBP: ‘commercial, financial, managerial and legal assistance, advertising, insurance, transport, films, recordings, and material covered by copyright, design and software’ ([OECD, 2005, p. 230](#)).

Table 3 Factor Loadings of Technology Outputs and Determinants

DTechnology Outputs	Non-EU Components			WN-EU Components			ES-EU Components		
	1	2	3	1	2	3	1	2	3
DTPEOEXP	-.062	.985	.018	.641	.238	.014	-.118	-.145	-.175
DTPEOIMP	.211	.945	.094	.759	.318	-.138	.145	.744	-.120
DTBPPEO	-.553	.797	-.021	-.007	.060	.347	-.258	-.905	-.169
DTPHMEXP	.920	.277	-.109	.556	.033	.700	.959	-.037	.188
DTPHMIMP	.962	.127	.197	.664	.073	.351	.807	.574	.057
DTBPPEO	-.775	.196	-.420	.071	-.022	.964	-.163	-.952	.117
DTEXP	.937	-.146	.211	.161	.728	.554	.970	.010	.156
DTIMP	.926	-.099	-.058	.067	.577	.750	.961	.102	-.167
DTBPT	.305	-.364	.753	.085	.957	-.016	-.180	-.275	.922
DTBPAR	.944	-.275	-.107	.835	-.304	-.136	.973	-.137	.135
DDeterminants									
DINDHR	-.044	-.576	-.221	.940	.183	.146	.060	.916	-.016
DGERDHR	-.161	.963	.066	.860	.331	.147	.471	.220	.810
DBRDHR	-.136	.969	.187	.815	-.375	-.162	.417	-.867	.195
DHERDHR	-.238	.840	-.418	.724	.314	.322	.525	.372	.258
DBERDPEO	.298	.858	-.138	.208	.144	.107	.096	.130	.008
DBERDPHM	.931	.259	.122	.216	.038	.231	.125	.043	.063
DBERDTOT	.559	.787	.231	.917	.224	.177	.338	.893	.178
DGVERD	.580	.798	.067	.907	.371	.122	-.063	.954	.257
DHERD	.892	.418	.031	.793	.157	.270	.607	.590	.463
DBIOPAT	-.971	.152	.118	-.517	-.653	-.229	.458	.075	.872
DPHMPAT	-.110	.031	.001	-.358	-.518	-.093	.348	.240	.887
DMTECPAT	.115	-.007	.139	.628	.390	.208	.919	.089	.323
DICTPAT	-.220	.441	.852	.151	-.719	.057	.814	.126	.532
DTRIPAT	-.750	.429	-.422	-.146	-.115	-.179	-.786	-.318	.365
DEPOPAT	-.514	.700	.039	.935	-.120	.099	.919	.049	.361
DPCTPAT	.121	.392	.892	.981	-.012	.120	.916	.226	.287
Eigenvalue	9.81	9.05	2.95	10.34	4.05	3.09	9.87	6.83	4.41
% variance	37.71	34.82	11.34	39.77	15.57	11.89	37.96	26.27	16.94

Tables 2 Technology Region Based on DTBP Related, DR&D Expenditure and DResearcher Clustering

DTBP related Outputs	1 st	2 nd	3 rd	4 th
DTBPT	Japan: 1794; Germany: 1448	Netherlands: 1090	Israel: 737; Sweden: 858; UK: 784	All other countries
DTEXP	US: 6289	Germany: 4782; Ireland: 4128	Italy: 1207; Japan: 1919; Netherlands: 3005; Sweden: 1454; Switzerland: 1592; UK: 2466	All other countries
DTIMP	US: 5977	Germany: 3334	Italy: 1471; Netherlands: 1915; Singapore: 1341; Switzerland: 2180; UK: 1683	All other countries
DTBPPEO	China: 14547	US: -8984	South Korea: 4645; Taiwan: 4660	All other countries; Czech republic: 193; Slovakia: 218
DTPEOEXP	China: 49171	South Korea: 7049; Taiwan: 7070	Germany: 3964; Singapore: 5182	All other countries
DTPEOIMP	China: 34043	US: 10720	All other countries	
DTBPPHM	Ireland: 2486; Switzerland: 2920	Japan: -1474; Russia: -1121; US: -2175	Germany: 1484; Belgium: 1080	Denmark: 409; Israel: 487; Singapore: 640; UK: 650, after which, all others countries
DTPHMEXP	Germany: 5219; Switzerland: 4237	Belgium: 3439; France: 2187; Ireland: 2087; Netherlands: 1739; UK: 1998; US: 2745	All other countries	NA
DTPHMIMP	Germany: 3394; US: 4481	Belgium: 2489; France: 1916; Italy: 1643; Japan: 1538; Netherlands: 1526; Switzerland: 1412; UK: 1606	Australia: 688; Austria: 552; Canada: 793; China: 968; Russia: 1118; Spain: 1032	All other countries
DBERDPEO	China: 3349	South Korea: 1370; Taiwan: 985; US: 1485	All other countries	NA
DBERDPHM	US: 4501	All other countries: 81.5 average	NA	NA
DGVERD	China: 2548; US: 2086	Germany: 663; Russia: 837	All other countries	
DHERD	US: 2710	Australia: 671; China: 1323;	All other countries	
DBIOPAT	US: -191	Germany: -43; UK: -26	All other countries: 2.6 average	NA
DICTPAT / DPCTPAT	Japan: 909 / 2372	China: 620 / 1371; South Korea: 355 / 800	US: -187 / 469 and all other countries	NA
DTRIPAT	US: -152; Japan: -125	China: 70; South Korea: 64	All other countries	NA
DEPOPAT	China: 367; South Korea: 387	US: -208	France: 145; Germany: 203	All other countries
DGERDHR	China: 15726	All other countries: 225 average ⁸⁸	NA	NA
DBRDHR	China: 46675	South Korea: 13418	All other countries ⁸⁹	NA
DHERDHR	China: 8731	Japan: -4372	All other countries ⁹⁰	NA

⁸⁸ ΔGERDHR average includes Spain's 2210 and Argentina's 1611 values.

⁸⁹ ΔBRDHR of Taiwan, Australia, Denmark, Italy, Germany, Mexico, Spain, and Turkey are: 5137, 1311, 1090, 1461, 3580, 1172, 2464, and 2689 respectively.

⁹⁰ ΔHERDHR of Australia, Canada, Germany, Japan, South Korea, Portugal, Spain, Turkey, UK, Russia, and Taiwan : 2022, 1968, 2536, 1825, 1805, 2130, 1785, 1835, 1330, 1444, and 1844 respectively,

Table4a East-Southern Europe DTBP versus DTEXP and DTIMP of all countries

	ES-EU DTBP			DTEXP, all countries			DTIMP, all countries		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
DINDHR	.626	.106	.469	.956	1.006	.173	.913	.813	.190
DGERDHR	.112	.037	.513	.844	.493	1.396	.637	.398	1.214
DBRDHR	-.219	.048	-3.813	-.518	.199	2.614*	-.486	.161	2.822**
DHERDHR	.204	.023	1.126`	-.058	.364	-.065	.017	.294	.022
DBERDTOT	.156	.173	.441	2.213	.938	3.951*	2.224	.758	4.574**
DGVERD	-1.612	.646	-2.764	-8.850	3.712	3.001*	8.485	3.002	3.315**
DHERD	-4.945	.503	3.791`	1.050	2.187	.323	1.148	1.769	.406
DTRIPAT	248.857	25.053	4.068`	10.741	29.891	-.246	3.846	24.170	.102
DEPOPAT	5.168	2.983	1.017	11.699	6.595	.753`	8.930	5.332	.662
DPCTPAT	15.991	1.060	5.229*	-1.359	1.578	-.390	1.378	1.276	-.455

p<0.1; *p < .05; **p < .01; ***p < .001

Table 5a DTPEOEXP and DTBPPEO of Western-Nordic Europe Versus All 41 Countries

D Tech Inputs	WN-EU DTPEOEXP			WN-EU DTBPPEO			DTPEOEXP, 41 countries			DTBPPEO, 41 countries		
	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta
DINDHR	26.983	33.678	.547	- 26.005	14.626	-.937	.716	1.348	.025	-.302	.783	-.027
DGERDHR	6.576	1.712	2.661*	6.472	.743	4.658***	1.009	.652	.325	.073	.379	.060
DBRDHR	.528	.190	.604*	.124	.083	.253	.593	.152	.583***	.303	.089	.760**
DHERDHR	-.207	.817	-.089	.383	.355	.291	-.390	.437	-.085	.058	.254	.032
DICTPAT	-41.375	8.588	-.921**	- 13.949	3.730	-.552*	- 6.639	2.927	-.155*	-1.693	1.700	-.101
DBERDPEO	.141	.734	.026	-.039	.319	-.013	1.262	.725	.125`	1.202	.421	.305**
DGVERD	-30.029	7.762	-3.386*	- 25.904	3.371	-5.195**	5.285	2.369	.349*	.354	1.376	.060
DHERD	5.101	3.773	.743	6.026	1.639	1.562*	- 4.190	1.802	-.251*	-4.362	1.047	- .666***

p<0.1; *p < .05; **p < .01; ***p < .001

Table 5b DTPEOIMP of the Non-European and Western-Nordic Europe Regions Versus all 41 Countries

D Tech Inputs	Non-EU DTPEOIMP			WN-EU DTPEOIMP			DTPEOIMP, 41 Countries		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
DINDHR	3.893	1.494	.204*	37.701	24.129	.910	1.090	1.039	.055
DGERDHR	3.996	1.205	1.891*	1.427	1.226	.688	.986	.503	.454`
DBRDHR	-.468	.759	-.652	.405	.136	.552*	.289	.118	.406*
DHERDHR	- 1.718	1.865	-.540	-.540	.585	-.275	-.685	.337	-.213`
DICTPAT	- 1.616	14.447	-.054	- 29.940	6.153	-.793**	- 3.854	2.257	-.128`
DBERDPEO	2.432	1.243	.351`	.270	.526	.059	.256	.559	.036
DGVERD	-.820	9.905	-.075	-7.362	5.561	-.989	4.723	1.827	.446*
DHERD	3.115	6.477	.256	.333	2.703	.058	-.026	1.390	-.002

p<0.1; *p < .05; **p < .01; ***p < .001

Table 6a DTBPPHM Western-Nordic Europe and East-Southern Europe Versus ‘Global’ DTBPPHM
WN-EU DTBPPHM ES-EU DTBPPHM DTBPPHM less outliers

D Tech Inputs	B	SE	Beta	B	SE	Beta	B	SE	Beta
DINDHR	-155.151	40.048	-5.014*	-.386	.013	-.124*	-.781	.673	-.070
DGERDHR	7.934	4.577	5.120	-.304	.004	-.593**	-.556	.302	-.455`
DBRDHR	-.825	.469	-1.504	.155	.002	1.153**	.452	.060	1.133***
DHERDHR	1.481	.826	1.009	-.069	.001	-.162*	.129	.229	.071
DGVERD	-7.242	23.551	-1.302	.879	.030	.644*	2.934	1.069	.489*
DHERD	22.377	5.226	5.199*	-2.574	.032	-.843**	-5.701	1.428	-.854***
DBERDPHM	-.292	.731	-.092	.104	.002	.094*	.378	.355	.103
DBIOPAT	260.450	101.595	3.719`	-35.537	1.615	-.366*	-13.919	13.112	-.143
DPHMPAT	-119.138	106.892	-1.688	82.722	1.263	1.042*	19.051	9.164	.987*
DMTECPAT	-87.482	60.928	-1.144	7.188	.410	.081*	-21.872	9.260	-1.143*

p<0.1; *p < .05; **p < .01; ***p < .001

Table 6b DTPHMEXP Western-Nordic Europe Versus ‘Global’ DTPHMIMP, DTPHMIMP Non-European Versus ‘Global’ DTPHMIMP

D Tech Inputs	WN-EU DTPHMEXP			DTPHMEXP less outliers			Non-EU DTPHMIMP			DTPHMIMP less outliers		
	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta
DINDHR	-147.641	53.317	-2.740`	.283	.909	.064	.233	.124	.093	.081	.359	.028
DGERDHR	9.144	6.093	3.388	.799	.615	1.689	-.096	.079	-.346	-.003	.161	-.008
DBRDHR	-1.315	.624	-1.377	-.175	.141	-1.109	-.119	.066	-1.270	-.059	.032	-.562`
DHERDHR	2.772	1.100	1.085`	-.507	.384	-.622	.313	.125	.752	.225	.122	.469`
DGVERD	-4.158	31.355	-.429	-1.725	4.236	-.590	2.081	1.196	1.449	-.046	.570	-.029
DHERD	25.193	6.957	3.361*	3.193	1.767	.687`	-.088	.475	-.055`	1.202	.762	.682
DBERDPHM	-.395	.974	-.072	.673	.438	.233	.031	.086	.037	.118	.189	.122
DBIOPAT	472.643	135.256	3.875*	34.803	34.137	.321	19.134	13.842	.877	12.129	6.997	.471`
DPHMPAT	-242.136	142.309	-1.969	-56.543	20.277	-7.480*	-17.966	4.586	-4.140*	-13.914	4.890	-2.732*
DMTECPAT	-88.525	81.115	-.665	55.944	20.053	7.436*	18.089	4.583	4.260*	14.231	4.941	2.817*

Table7a DBIOPAT DPHMPAT, DMTECPAT of the Non-European, Western-Nordic Europe and East-Southern Europe Regions

D Tech Inputs	DBIOPAT Non-EU			DICTPAT Non-EU			DPHMPAT WN-EU			DMTECPAT ES-EU		
	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta
DINDHR	.000	.005	.004	-.036	.037	-.057	-.197	.273	-.450	.014	.013	.400
DGERDHR	.003	.003	.227	.033	.029	.458	.052	.013	2.375**	.007	.003	1.183`
DBRDHR	.004	.001	.964***	.050	.006	2.069***	.004	.001	.484*	-.003	.001	-1.940
DHERDHR	-.001	.001	-.046	-.123	.014	-1.154***	-.005	.007	-.253	.001	.001	.137
DGVERD	-.074	.012	-1.126***	-.628	.104	-1.704**	-.228	.054	-2.899**	-.048	.019	-3.158`
DHERD	-.008	.011	-.109	.407	.071	.997**	.035	.031	.566	.043	.020	1.244`
DBERDPHM	-.003	.004	-.067		NA		.002	.006	.049	.003	.002	.261
DBERDPEO				-.034	.030	-.148						

`p<0.1; *p < .05; **p < .01; ***p < .001

Table7b DPatents of the Non-European Region

D Tech Inputs	DTRIPAT			DEPOPAT			DPCTPAT		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
DINDHR	-.033	.003	-.260**	-.154	.030	-.469*	-.017	.026	-.012
DGERDHR	-.031	.003	-2.214**	-.125	.033	-3.426*	-.008	.029	-.046
DBRDHR	.009	.002	1.865*	.063	.024	5.061`	.012	.021	.213
DHERDHR	.014	.007	.665	.024	.066	.436	-.016	.058	-.064
DBIOPAT	-.450	.430	-.403	-4.184	4.192	-1.455	-6.135	3.678	-.464
DPHMPAT	.524	.165	2.361`	.532	1.606	.930	.257	1.409	.098
DMTECPAT	-.497	.166	-2.290`	-.433	1.618	-.773	-.236	1.420	-.092
DICTPAT	.012	.034	.061	.088	.335	.172	2.483	.294	1.052**
DBERDTOT	-.008	.006	-.579	-.075	.059	-2.118	.009	.052	.058
DHERD	.078	.031	1.060`	.134	.307	.710	-.197	.269	-.226
DGVERD	-.078	.024	-.955`	-.166	.239	-.790	.029	.209	.030

`p<0.1; *p < .05; **p < .01; ***p < .001

An Entrepreneurial Self-Efficacy Scale for the Social Entrepreneur....

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An Entrepreneurial Self-Efficacy Scale for the Social Entrepreneur

ABSTRACT

To achieve a just and equitable world we need more funding for social entrepreneurship, but we also need more-capable social entrepreneurs, since skill deficiencies of the latter may inhibit the provision of the former. To best allocate limited funding for social ventures there is need for a measure of the social entrepreneur's ability to successfully accomplish the tasks involved, such that individuals might be induced to build these abilities, and funding sources might screen applicants on the basis of their task-specific abilities. In the case of commercial entrepreneurs, scholars have suggested a scale to measure the individual's self-efficacy for the tasks involved prior to funding. In this paper we develop an alternate scale to measure Social Entrepreneurial Self Efficacy for prospective social entrepreneurs.

Introduction

Social entrepreneurship operates to fill the gaps left by market failure and government failure (Leadbeater, 1997; Santos, 2012). It seeks to reduce social and economic inequity and to alleviate hardship suffered by disadvantaged individuals or groups, both locally and globally. Social problems continue to exist and in many cases are indeed worsening. Individuals, organizations and governments concerned with social equity need to encourage and induce more social entrepreneurship in order to help build a better world. Social entrepreneurs are often volunteers or typically do not make much income from their efforts – they do it for reasons of altruism, compassion, empathy, and other motivations (Tan, Williams & Tan, 2005; Miller, Grimes, McMullen & Vogus, 2012). Unfortunately, while social entrepreneurs seem to be invariably well-intentioned and good hearted, some may be insufficiently skilled to successfully complete the tasks of social entrepreneurship. They self-select based on their concern for others but with few if any checks on their competence to successfully undertake and implement social entrepreneurship, such that the social value achieved is not as high as it might be with better management of social ventures. Given that public and philanthropic funds are commonly utilised to fund social entrepreneurship, not to mention the 'wastage' of private funds that are sub-optimally misspent on good causes, there is a need to better scrutinize the management competence of those undertaking social entrepreneurship prior to their expending the limited funds made available for social purposes.

Who comes forward to be a social entrepreneur? The entrepreneurial intentions literature has investigated this issue extensively in the context of commercial entrepreneurs. Using the theoretical lens of the theory of planned behavior (Ajzen, 1991), this literature now generally agrees that entrepreneurial intention depends on two main issues, namely the perceived desirability (PD) and perceived feasibility (PF) of the intended action (Krueger, Reilly & Carsrud, 2000). PD involves the individual's attitudes to the salient outcomes of the action in conjunction with the magnitude of those expected outcomes. PF involves the individual's ability to successfully complete the tasks required by the activity. PF has been parsimoniously measured by entrepreneurial self-efficacy (Bandura, 1977; Boyd & Vozikis, 1994; McGee, Peterson, Mueller & Sequeira, 2009). "An individual with high self-efficacy for a given task will exert more effort for a greater length of time, persist through set backs and accept higher goals, and develop better plans and strategies for the task. A person with high self-efficacy will also take negative feedback in a more positive manner and use that feedback to improve their performance" (Shane, Locke, & Collins 2003, 267). But whereas the self-efficacy of commercial entrepreneurs has attracted considerable attention, little formal research has considered the self-efficacy of social entrepreneurs.

Much has been written about the motivation for social entrepreneurship, and it is generally agreed that the motivation is primarily non-pecuniary rather than profit oriented (see, e.g. Austin, Stevenson, Wei-Skillern, 2006; Martin & Osberg, 2007). These studies usually focus on the PD side – i.e. they discuss attitudes towards altruism, compassion, empathy, and similar cognitions. We note that ‘motivation’ should explain why someone would want to do something (Wiklund, Davidsson & Delmar 2003), and thus should include consideration of both PD and PF. Self-determination theory (Deci & Ryan, 1985; Gagne & Deci, 2005) argues that the individual’s innate need for competency motivates them to undertake actions at which they expect to be successful. Accordingly, PD and PF acting together incentivize the individual to undertake the particular action that is expected to maximize their wellbeing or utility (Douglas & Shepherd, 2000; Fitzsimmons & Douglas, 2011; Douglas, 2013).

On the other (PF) side of the motivation issue, little has been said about the abilities, skills and knowledge needed to successfully accomplish social entrepreneurship. It is frequently acknowledged that the required tasks are different in degree or in totality from the tasks required of commercial entrepreneurship (e.g. Peredo & McLean 2006; Lumpkin, Moss, Gras, et.al. 2013) and that social entrepreneurs are different from commercial entrepreneurs (e.g. Austin et al 2006; Mair & Marti 2006; Shaw & Carter 2007). Some authors have noted that prior knowledge and engagement with the target market provides knowledge that is an antecedent of social entrepreneurship (Ardichvili, Cardozo, & Ray 2003; Shane 2000). Others have argued that the social entrepreneur should have the ability to network and engage with people to achieve the results envisioned (Austin et al., 2006). Some have focused on the social entrepreneur’s leadership skills and ability to motivate workers and volunteers (e.g. Prabhu 1999; Zahra, Gedajlovic, Neubaum & Shulman 2009). But no specific self-efficacy scale for social entrepreneurs has yet been suggested in the literature, to our knowledge.

In this paper we propose a specific self-efficacy scale to more effectively measure the abilities, skills and knowledge needed by social entrepreneurs. We integrate prior mainstream commercial entrepreneurship research with social entrepreneurship research to derive a series of research propositions, and propose a Social-Entrepreneurship Self-Efficacy (SESE) scale that should prove useful for future research and for the identification in practice of more-competent social entrepreneurs. To our knowledge this is the first instance of a self-efficacy scale that is designed specifically for predicting intentionality for social entrepreneurship or success in socially-oriented entrepreneurial ventures.

In the remainder of this paper we first outline the theory of planned behavior, self-determination theory, and the expectancy-valence model of individual choice, as previously utilized in the entrepreneurship literature. In the third section we overview the social entrepreneurship literature on the abilities, skills and knowledge of social entrepreneurs, and suggest a series of research propositions relating to six main task areas of social entrepreneurship, namely innovation, communication and persuasion, bricolage, networking, people management, and financial management. We also develop several survey items for each of these five dimensions of SESE, such that we propose a scale for the measurement of SESE in fledgling and practising social entrepreneurs. In the discussion section we consider several issues relating to the use of a SESE measure, and finally we conclude with a summary and implications for practice, policy, education, and further research.

Entrepreneurship as Planned Behavior

Ajzen’s (1985, 1991) theory of planned behaviour (TPB) has been widely used to explain human behavior, including entrepreneurial behavior (Krueger, 1993; Krueger & Brazeal, 1994; Krueger & Carsrud, 1993; Krueger, Reilly & Carsrud, 2000; Fitzsimmons & Douglas, 2011; Douglas, 2013). The TPB argues that the formation of the intention to undertake a particular

behaviour predicts the individual's subsequent actualisation of that behaviour. Entrepreneurship is a behavioural phenomenon (Gartner, 1988) and the intention to behave entrepreneurially is determined by the 'perceived desirability' and the 'perceived feasibility' of the contemplated behaviour (Krueger et al., 2000). Perceived desirability (PD) can be measured using expectancy-valence theory (Vroom, 1964) whereby the expected outcomes of the action (the expectancies) are weighted by the attitudes to those outcomes (the valences) and the sum of these products measures the individual's expected utility associated with undertaking the action (Douglas & Shepherd, 2002; Steel & Konig, 2006; Douglas 2013). Perceived feasibility (PF) measures the individual's self-confidence that he/she possesses the skills and knowledge required to successfully complete the tasks required of the contemplated behavior, and is parsimoniously measured by 'self-efficacy' (Bandura, 1977). Since self-efficacy is task specific, scholars have suggested measures for entrepreneurial self-efficacy (ESE), these relating to the tasks that an entrepreneur would need to accomplish (Boyd & Vozikis, 1994; Chen, Greene & Crick, 1998; De Noble, Jung & Erlich, 1999; McGee et al., 2009; Zhao, Seibert & Hills, 2005). When either or both PD and PF of entrepreneurship are relatively high, we expect the individual to form the intention to undertake entrepreneurship subsequently (Fitzsimmons & Douglas, 2011). These latter authors have also shown that there may be a negative interaction effect between PD and PF due to the individual applying preventative self-regulation (Brockner, Higgins & Low, 2004) when evaluating an entrepreneurial opportunity.

Perceived desirability can be measured in theory as the expected psychic satisfaction (or utility) that the individual expects to derive from experiencing the outcomes of an action or behavior (Steel & Konig, 2006). Expectancy-valence theory (Vroom, 1964) has been used in the entrepreneurship context to explain the link between perceived desirability and the formation of entrepreneurial intentions (Fitzsimmons & Douglas, 2011; Douglas, 2013) or intentions to grow the firm (Wiklund, Davidsson & Delmar, 2003). The individual forms quantitative expectations of the outcomes of entrepreneurial behavior, such as the income, autonomy, risk exposure, and work enjoyment expected and weights these by his/her attitudes toward these outcomes. The sum of these 'utility-part-worths' is the total utility expected from the behavior and thus measures the perceived desirability of the behavior (Douglas, 2013). We expect self-serving individuals to choose the behavioural option that will maximize their expected utility (Douglas & Shepherd, 2000), assuming they are capable of achieving the behavioural outcomes envisioned. Thus they may be motivated to undertake that behavioural option but may be restrained by the perception of their own skills, knowledge and abilities (i.e. their self-efficacy) and hold back rather than launch into a new venture that they feel incompetent to complete successfully.

Self-determination theory (Deci & Ryan, 1985, 2000; Gagne & Deci, 2005) argues that individuals have innate and situational psychological needs and will choose among alternatives such that these needs are best satisfied. Self-determination theory (SDT) argues that there are three innate psychological needs, namely the needs for competence, autonomy, and relatedness. The need for competence is the need to achieve successful results connected with tasks undertaken, and is related to the need for achievement (McClelland, 1967). The need for autonomy stems from the cognitive preference for freedom, and for independent decision making. The need for relatedness is concerned with the need to have social interactions with others. SDT also argues that 'situational' needs arise in particular contexts. In the entrepreneurship context, situational needs might include the need for risk avoidance, the need for financial return, and the need for avoidance of excessive work effort (Douglas, 2013). In the context of social entrepreneurship, these innate and situational needs all seem highly relevant, but the innate need for competence is the one that is most relevant to the focus of this paper, namely the perceived feasibility (or self-efficacy) of social entrepreneurs. SDT argues

that people will gravitate to careers, behaviors or tasks at which they expect to do well, rather than to undertake behaviors at which they do not feel confident of a successful outcome. Thus we expect that the higher the individual's entrepreneurial self-efficacy, the more likely they will form the intention to become an entrepreneur and to persist as an entrepreneur (Boyd & Vozikis, 1994). In the context of social entrepreneurship, we expect that the higher the individual's social-entrepreneurship self-efficacy (SESE) the more likely they are to form the intention to become a social entrepreneur and persist with social entrepreneurship.

The majority of the entrepreneurial intentions literature has focused on commercial entrepreneurs – i.e. those primarily seeking to make profit from their entrepreneurial behavior. Accordingly those studies have focused on the attitudes and self-efficacies that are salient to commercial entrepreneurship. Given that social entrepreneurship – i.e. pro-active, risk-taking innovation undertaken primarily in pursuit of social benefits (see, e.g. Peredo & McLean, 2006; Zahra, Gedajlovic, Neubaum, & Shulman, 2009; Short, Moss & Lumpkin 2009; Nicholls, 2010; Moss, Short, Payne & Lumpkin, 2011; Bacq & Janssen, 2011; Zahra & Wright, 2011; Dacin, Dacin & Tracey, 2011; Choi & Majumdar, 2014; Newbert & Hill, 2014) – has different salient outcomes to commercial entrepreneurship, in attempting to predict social entrepreneurial intentions we should refer to the attitudes and self-efficacies associated with these different salient outcomes. Others have considered the attitudinal drivers of social entrepreneurship (see, e.g. Arend, 2013; Austin, Stevenson & Wei-Skillern, 2006; Douglas, Weaven & Bodey, 2014). Our concern here is on the self-efficacy of social entrepreneurs, and so we will focus on the abilities, skills and knowledge that the individual needs in order to be effective in the conduct of social entrepreneurship.

A first question is whether the abilities, skills and knowledge needed for commercial entrepreneurship are also needed for social entrepreneurship. While there have been several scales developed to measure ESE (Chen et al., 1998; De Noble et al, 1999; Kolveried & Isaksen, 2006), McGee et al. (2009) take a process view of ESE and consider items that relate to the stages of opportunity recognition, resource assembly, implementation and human and financial management. These stages of entrepreneurial emergence seem relevant for social entrepreneurship as well, although some of the items require re-wording to reflect the nuances of the tasks involved in social entrepreneurship. For example, opportunity recognition requires the simultaneous processing of two sets of information – on the one hand the entrepreneur needs to perceive the needs of the target customer, and on the other hand she needs to understand the possibilities offered by the existing technology. Possession of relevant knowledge on both sides of this demand-technology nexus has been characterized by Kirzner (1979) as 'entrepreneurial alertness' and is a necessary antecedent of opportunity recognition. For social entrepreneurship the customer's need is usually well-known (Austin et al., 2006); what is lacking is the technology to deliver the product or service at low enough cost to make it feasible for the social venture to provide that product or service.

A second question is whether the successful accomplishment of social entrepreneurship requires additional abilities, skills and knowledge compared to commercial entrepreneurship. Since the disadvantaged end-user customer for social entrepreneurship is likely to be suffering a plight that is emotionally upsetting for a compassionate person to observe, the social entrepreneur may need the mental ability to endure the emotional upset caused by repeated observation of unfortunate individuals and circumstances, unlike the commercial entrepreneur whose customers typically enter the market with funds to purchase the goods or services offered and impose little or no emotional upset on the provider.

A third difference between commercial and social entrepreneurs is that the former generally expect to simply purchase resources at their market price, whereas the latter may have to negotiate, persuade and cajole providers to supply resources to the firm or organization. This may be due to the social entrepreneur being unable to raise sufficient funding due to being

unable to offer a competitive return on investment funds, or alternatively to the absence of markets for the goods or services needed to solve the social problem and as a consequence having to persuade other individuals or firms to supply and/or assemble the components of the required solution. The interpersonal skills required to persuade others to supply goods and services at no cost or at below market value are additional to those mentioned above for the commercial entrepreneur. While the commercial entrepreneur may require negotiation skills, the social entrepreneur requires in addition the skills of persuasion that will induce individuals or firms to exhibit personal or corporate social responsibility.

A Social-Entrepreneurship Self-Efficacy Scale

Currently entrepreneurial self-efficacy scales can be distilled into the following role-tasks: opportunity recognition, innovation, people management, financial management, and risk and uncertainty management skills. Opportunities are more ubiquitous for social entrepreneurs than commercial entrepreneurs since social problems are prevalent (Austin et al 2006). The creation and implementation of a feasible, innovative solution is the greater challenge for social entrepreneurs. Further, risk tolerance is not included in our proposed scale for it reflects attitude and not ability. Despite the similarity in nomenclature of the constructs, there are differences in the conceptualisation of each for the two different entrepreneurs. In this section we discuss the inadequacy of current scales in addressing the scope of abilities required by the social entrepreneur and propose the six dimensions of SESE.

Innovator: Innovativeness has been found to be significant in the case of social entrepreneurs. Researchers have conceptualised social entrepreneurship as innovative activities that create social value (Dees 1998; Sullivan Mort, Weerawardena, & Carnegie 2003; Austin et al 2006). Studies into entrepreneurial orientation (Miller 1983; Covin & Slevin 1989; Lumpkin & Dess, 1996) in the context of social entrepreneurs have found that this is one of the significant dimensions (Pearce, John, Fritz, & Davis 2010; Voss, Voos, & Moorman 2005). For example, Weerawardena and Mort (2006) found innovativeness to be a core behavioural dimension along with pro-activeness and risk management in their framework for social entrepreneurship. They also found that not-for-profit ventures were being forced to be innovative because of increased competitiveness. Social ventures are also forced to be innovative because of their resource constraints. The creative use of minimal resources (Leadbeater, 1997) and continuous innovation (Dees, 1998) have been included in the conceptualisation of social entrepreneurship. Innovativeness need not be limited just to their social-value creating activities but may also extend to other activities such as funding.

Social entrepreneurs identify inherently unjust social equilibria and attempt to effect sustainable change in the status quo (Martin & Osberg, 2007). The social value proposition for the social entrepreneur is to have an impact on a significant portion of the society or society at large. Therefore, social entrepreneurship can result in social upheaval. The product of the social enterprise may be the promotion of an ideology and/or social change, as opposed to a consumer product or service as in commercial entrepreneurship (Dacin, Dacin, & Matear, 2010).

Apart from the difference in the 'product', the scale and scope of innovation in social entrepreneurship is different. In commercial entrepreneurship, the entrepreneur tries to serve an unmet need of a segment of the society who can afford the new product/service. However, in social entrepreneurship, the unmet need stems from marginalisation. Therefore, the innovation has to be sustainable and affordable for the marginalised section. Such socially and economically marginalised segments form a considerable part of most societies today.

It should also be noted that innovativeness takes on more importance considering the boundaries within which the social ventures operate. As Weerawardena and Mort (2006) find,

the social ventures are bounded by their social mission, drive for sustainability, and environmental dynamism.

Current scales lack the depth or clarity to assess the innovativeness of a social entrepreneur. Present scales of entrepreneurial self-efficacy measure innovation use items such as:

- "I can create products that fulfil customer's unmet needs" (De Noble et al., 1999)
- "brainstorm a new idea for a product or service" (McGee et al., 2009)
- "new venturing and new ideas" (Chen et al., 1998)
- "developing new product and market" (Barbosa, Gerhardt, & Kickul, 2007)
- "discover new ways to improve existing products/services" (Kolvereid & Isaksen, 2006)

Since these items seem to be generally ill-suited to the context of social entrepreneurship where the problem is obvious, we propose the following 'innovation' items to be included in the social entrepreneurial self-efficacy scale.

How much confidence do you have in your ability to:

- (i) *Discover or create innovative solutions to social problems?*
- (ii) *Recognise feasible, implementable solutions to social problems?*
- (iii) *Think creatively to imagine new ways to solve social problems?*
- (iv) *Solve complex problems by considering the finer details?*
- (v) *Think laterally; think 'outside the box'?*

People Manager: Managing people is one of the important competencies required for the creation and growth of any firm (Chandler & Jansen 1992). This requirement is similar in the case of both commercial and social ventures. However, resource mobilization is more constrained for the social entrepreneur. The social entrepreneur usually lacks the financial resources to attract and retain the best talent (Austin et al. 2006). Nor can the not-for-profit social enterprises cannot incentivise employees using stock options.

Social enterprises are driven by the entrepreneur's vision to effect change in the community. Given the resource constraints, it is important that the entrepreneur is able to effectively articulate her vision as well as inspire and encourage people to work towards achieving the mission of the social venture. This is significant since these ventures are usually dependent on volunteers and individuals willing to work towards a cause at low wages.

The present scales use indicators for people management such as:

- "I can communicate effectively with others" (De Noble et al 1999)
- "Define organizational roles, responsibilities, and policies" (Chen et al 1998)

With the exception of McGee et al. (2009), other scales have a broad articulation of people management. Kolvereid & Isaksen (2006) and De Noble et al. (1999) only seek the entrepreneur's confidence in maintaining relationships with potential investors and sources of capital. McGee et al. (2009) specifically address people management by including questions on recruiting, hiring, supervising, and training employees; delegating tasks; and inspiring and motivating employees.

The key incentive at the disposal of a social entrepreneur in his management of people is the social mission and its effective communication. Commercial and for-profit ventures use the prospective financial gains for the stakeholders for their active support. However, social enterprises have to rely on human capital mobilization by a relatable social mission. This puts greater emphasis on the entrepreneur's ability to inspire and motivate employees. Accordingly, we adopt McGee et al.'s (2009) items for implementing (people).

How much confidence do you have in your ability to:

- (i) *Supervise employees?*
- (ii) *Recruit and hire employees?*
- (iii) *Delegate tasks and responsibilities to employees in your business?*
- (iv) *Deal effectively with day-to-day problems and crises?*
- (v) *Inspire, encourage, and motivate my employees?*
- (vi) *Train employees?*

Networker: A social venture's key goal is social value creation. This requires the participation of multiple stakeholders. These include private citizens, government agencies, non-governmental establishments, individual donors, institutional funders, etc. This implies that the entrepreneur will have to interact with different people and organizations from varied backgrounds in order to obtain the necessary resources for the creation and sustenance of the venture. It is important for the social entrepreneur to articulate the vision and impact of the social mission to maintain relationships with these multiple stakeholders. As Austin et al (2006; 12) point out, "a social entrepreneur must be skilled at managing a wider diversity of relationships with funders, manager, and staff from a range of backgrounds, volunteers, board members, and other partners, with fewer management levers."

Haugh (2007) underscores the importance of networks in the creation of a social venture. She speaks of two types of networks: the formal network which includes formal avenues of advice such as government bodies, etc which form the network in the initial stages of ideation; the tailor-made support network, which evolves as the idea progresses to the fruition stage and includes actors of importance from the formal network and new members who bring in specific expertise and resources necessary for the venture. Importance of networking skills has also been underscored by Sharir and Lerner (2006) who found it and total dedication to be the two variables contributing to the success of a social venture. Other studies have also found results that point towards the importance of networking skills of a social entrepreneur (Alvord, Brown, & Letts 2004; Purdue 2001).

As Di Domenico, Haugh, & Tracey (2010) point out, one of the important additional benefits of a social enterprise is enhanced community cohesion. This is accomplished by close and active participation of all stakeholders in the creation, management, and governance of the enterprise. This ensures that the venture is embedded in and accountable to the communities that they serve (Pearce & Kay 2003). Facilitating such enhanced participation also requires people management skills.

The social entrepreneur has to network with a diverse range of individuals and institutions. Effecting social change requires the involvement of people from different backgrounds, experiences, and the society/community at large.

The current scales predominantly focus on relationship building with possible investors and financiers. Most current ESE scales do not emphasise the need of the entrepreneur to network.

- "I can identify potential capital sources for the venture" and "I can develop relationships with people who connect to sources of funds" (De Noble et al. 1999)
- "Develop and maintain favourable relationships with potential investors" and "develop relationships with key people who are connected to capital resources" (Kolvereid & Isaksen, 2006).

McGee et al (2009) include networking in their 'marshalling' construct with items such as "network- i.e., make contact with and exchange information with others" and "clearly and concisely explain verbally/in writing my business idea in everyday terms". We propose items that will give a broader scope of networking, as in the following.

How much confidence do you have in your ability to identify and build relationship with:

- (i) *Governments and government agencies?*
- (ii) *Philanthropists and charities?*
- (iii) *Suppliers?*
- (iv) *Customers?*
- (v) *Investment sources?*

Finance Manager: Along with people management, financial management is an important competency for the creation and growth of a firm (Chandler and Jansen 1992). Turner and Martin (2005) find that a mix of managerial and entrepreneurial skills is required for running community-based projects. Managerial skills required include managing budgets and administering a funded program. Given the typically binding resource constraints, the entrepreneur may have to employ creative means of resource utilisation in order to ensure efficient use of scarce resources which includes financial resources as well. In our view most

Current scales address the issue of financial management adequately, with items as follows:

- “Perform financial analysis”; “Develop financial system and internal controls”; “Control cost” (Chen et al. 1998)
- “Manage expenses”; “Control business costs”; “Manage cash flows” (Kolvereid & Isaksen 2006)
- “Organize and maintain financial records of my business”; “Manage the financial assets of my business”; “Read and interpret financial statements” (McGee et al. 2009)

We choose to adopt McGee et al.’s (2009) 3-item scale (which proved reliable) for implementing (financial), which are:

How much confidence do you have in your ability to:

- (i) *Organize and maintain the financial records of my business?*
- (ii) *Manage the financial assets of your business?*
- (iii) *Read and interpret financial statements?*

Bricoleur: The first construct of bricolage as making do with resources at hand was identified by Lévi-Strauss (1967). Most entrepreneurs face resource constraints (Sharir & Lerner 2006; Purdue 2001). Given such constraints, entrepreneurs are required to be able to make do with and make the best of the resources at hand. Unlike a commercial venture, social ventures are most likely to be dependent on private donations and government funding for their functioning. Apart from and due to these constraints with respect to financial resources, human resources are usually not all employed with salaries and some or many of the venture’s workers are volunteers acting out of their own volition towards the cause/mission of the venture. Baker & Nelson (2005: 330) found that the concept of bricolage explained “entrepreneurial persistence in depleted and constrained environments”. Domenico et al. (2010: 669) extended this concept to the social entrepreneurship context by contending that the “process of social bricolage is associated with resource-poor environments in which the lack of resources pushes the social enterprise to use all available means to acquire unused or underused resources that are capable of being leveraged in a different way to create social value”. Alvord et al. (2004) find that social entrepreneurs employ creative resource strategies. Further, Baker and Nelson (2005) identify not getting constrained by limitations as a second construct. Peredo and McLean (2006) find that social entrepreneurs refuse to be constrained by resource limitations. The third construct is improvisation which calls for creative thinking to deal with environmental dynamism (Weick 1993). Di Domenico et al. (2010) also add stakeholder participation, persuasion, and social value creation as additional constructs of bricolage in the context of social entrepreneurship.

Current scales of entrepreneurial self-efficacy do not address the concept of bricolage even though it is important for all kinds of venture. There are questions concerning the confidence of the entrepreneur in her ability to manage the resources of cash and time effectively (De Noble et al. 1999). However, they fall short of asking questions with the specific focus of scarcity of resources. For social enterprises, the social mission trumps economic value creation and bricolage takes on a special emphasis. Also, it should be noted that the demand for the “product” of a social enterprise is typically high relative to the size of the firm and they tend to launch into growth and expansion before sufficient resources are available (Austin et al. 2006). The scale suggested by Senyard, Baker & Davidsson(2009) which includes questions such as “we are confident of our ability to find workable solutions to new challenges by using our existing resources” and “we combine resources to accomplish new challenges that the resources weren’t originally intended to accomplish” provides direction to the development of the dimension in entrepreneurial self-efficacy scale for social entrepreneurs. Accordingly, we adapt 6 out of 8 items of Senyard et al.’s (2009) scale.

How much confidence do you have in your ability to:

- (i) *Find workable solutions to new challenges by using your existing resources?*
- (ii) *Take on a broader range of challenges than others with your resources would be able to?*
- (iii) *Use any existing resource that seems useful to responding to a new problem or opportunity?*
- (iv) *Deal with new challenges by applying a combination of your existing resources and other resources inexpensively available to you?*
- (v) *Take action by assuming that you will find a workable solution when dealing with new problems or opportunities?*
- (vi) *Put together workable solutions from your existing resources when facing new challenges?*

Communicator & Persuader: Social entrepreneurs work in resource-scarce environments toward social causes. Unlike commercial entrepreneurs, social entrepreneurs are unable to incentivise people and communities financially or materially to get involved in the cause. However, for a social mission to succeed, the involvement of a diverse set of actors is essential. It is important for the social entrepreneur to be able to communicate her vision to these potential actors and persuade them to get on board. Their powers of persuasion are also important to get the targeted sections of society to adopt the innovation. Marginalised sections of the society are usually sceptical of offers of help especially when they change the status quo. There are questions of the intentions and degree of commitment of the entrepreneur. In such instances, it is important for the entrepreneur to be able to communicate effectively and convince the intended customers to buy into the innovation.

Current scales include items on articulating vision to employees (McGee et al. 2009) and communicating to possible funders (De Noble et al. 1999). No scale has addressed the task of getting individuals and organisations to buy into the entrepreneur’s vision by appealing to them without offering any pecuniary benefits.

We propose the following items.

How much confidence do you have in your ability to:

- (i) *Persuade individuals and organisations to get involved in your social cause?*
- (ii) *Convince customers to adopt the innovation and change their status quo?*
- (iii) *Cajole individuals to support your cause when they seem unwilling?*

- (iv) *Induce financial support for your social cause?*
- (v) *Encourage suppliers to provide goods and services at minimal costs?*

Thus we have proposed a total of 30 items that we expect will form six factors that indicate social-entrepreneurship self-efficacy as given in table 1.

[Insert Table 1 here]

It remains to pilot test these with an appropriate initial sample to test for the internal consistency and reliability of these factors. This may reveal that the wording of some items should be modified, and/or that some items need to be deleted. A subsequent field test of the scale with a broad sample of social entrepreneurs is then required.

Discussion

Previous ESE scales have tended to confound PD and PF in their ESE scales. For example, De Noble et al. (1999) include reacting quickly, and being persistent, as abilities in their ESE scale, but these seem to be the behavioural result of specific attitudes, rather than abilities per se. Chen et al., (1998) include risk taking in their ESE measure. The ability to bear downside losses may be related to the entrepreneur's overall wealth or the breadth of their investment portfolio, but willingness to take risks is surely attitudinal and belongs on the perceived desirability side of the motivation to behave entrepreneurially. We note that McGee et al., (2009) do not include any mention of risk tolerance in their ESE measure.

We do accept that risk exposure might be expected to vary between social and commercial entrepreneurs. If the former are spending public or philanthropic funds rather than their personal funds they will face lesser financial risk. But there are other facets of risk involved in entrepreneurship. There is a physical risk, namely the health risk associated with working too hard and becoming physically ill due to insufficient sleep, improper diet, and other deleterious effects of extreme physical labor. A priori it is hard to say whether this risk would in general be greater for commercial versus social entrepreneurs. A third risk is that of mental breakdown which may occur as a result of prolonged periods of stress or the depression that might follow adverse outcomes. This risk may be greater for social entrepreneurs who are likely to be more compassionate and likely to be exposed repeatedly to deplorable situations endured by their target customers. Fourth, there is the risk of marriage and family breakdowns that might follow years of long working hours and an apparent obsession with the entrepreneurial venture to the exclusion of one's spouse and family members. Again, a priori, it is hard to say whether this risk would in general be greater for commercial versus social entrepreneurs.

We also arrive at a more comprehensive scale to measure SESE. Despite the importance of the concept of bricolage (Baker & Nelson 2005), it has not been explicitly studied in the context of entrepreneurial self-efficacy. Generally resource scarcity is more acute in the case of social entrepreneurs. By including the ability to creatively use available limited resources to solve complex problems, we have directed attention to the important task-role of bricoleur which has hitherto been ignored in all ESE scale development. We have also addressed the scale and scope of a social enterprise by re-conceptualising the roles and tasks involved in the specific context. We have departed from the pre-occupation with the financial aspects alone of the commercial venture reflected in existing scales with questions predominantly on sources of funding and so forth. We have adopted a balanced view more appropriate to the social entrepreneurship context. We have included abilities to deal and communicate with a diverse set of actors and included skills that are necessary for the entrepreneur to persuade involvement with the social enterprise in multiple ways.

Summary and Implications

In this paper we have considered the *a priori* ability of social entrepreneurs and suggest a multi-factor scale to measure their social-entrepreneurship self-efficacy (SESE), after arguing that the self-efficacy scales developed for commercial entrepreneurs are not fully appropriate since some of the tasks involved in social entrepreneurship are significantly different from those of commercial entrepreneurship. We suggested six roles played by social entrepreneurs, namely innovator, networker, communicator, bricoleur, people manager, and finance manager. The latter two of these are essentially similar to two of the roles suggested for commercial entrepreneurs by McGee et al., (2009), and we have adopted their items. Similarly for the bricoleur role we adapt the eight item scale suggested by Senyard et al., (2009). For the innovator, networker, and communicator roles we suggested several items for each construct that may be subsequently tested for their empirical reliability and consistency.

By so doing we make three main contributions to the social entrepreneurship literature and entrepreneurship literature in general. First, we argue that existing ESE constructs are too narrowly defined in terms of the commercial entrepreneurship context to be suitable for identifying those with potential to successfully undertake social entrepreneurship. Second, we suggest a series of items for a multi-factor scale that purports to measure the SESE of nascent and practising social entrepreneurs. Third, we draw attention to the confounding of prior ESE measures by the inclusion of items that relate to attitudes or behaviors, rather than the abilities, skills or knowledge that should, for construct clarity (Suddaby, 2010) represent any measure of the intending entrepreneur's perceived feasibility of the entrepreneurial behavior contemplated.

Our proposed SESE scale has implications for public policy, business education, and entrepreneurship research. Government failure (Santos, 2012) which is their inability to rectify all social issues due to their limited budget to be spent for social purpose, may be reduced if government agencies were better able to measure the ability of the myriad applicants for public funding to redress social problems. Similarly, philanthropic organizations, private individuals who fund social ventures, and commercial ventures who practice corporate social responsibility might screen the managers of social ventures on the basis of their SESE before committing substantial sums of money to such ventures. Implications for entrepreneurial education include the importance of incorporating the training of social entrepreneurship abilities into entrepreneurship courses. Indeed, since corporate social responsibility is increasingly expected of commercial entrepreneurs and firms more generally, SESE should be considered in the wider business and management curricula.

Finally our paper has several implications for future research. Scholars will wish to test empirically the SESE scale for its reliability and consistency. This scale, or a modified version thereof, may be used to explain social entrepreneurial intentions, or to distinguish between those more suited to social entrepreneurship than commercial entrepreneurship, or to explain the success, or growth, or profitability of some social enterprises relative to other social ventures that fare less well. There is still much scope for further research in this area.

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Table 1: Proposed SESE scale

		Very Little				Very Much
	Innovator - (How much confidence do you have in your ability to...?)					
q1.1	discover or create innovative solutions to social problems					
q1.2	recognise feasible, implementable solutions to social problems					
q1.3	think creatively to imagine new ways to solve social problems					
q1.4	solve complex problems by considering the finer details					
q1.5	think laterally; think 'outside the box'					
	People Manager - (How much confidence do you have in your ability to...?)					
q2.1	supervise employees					
q2.2	recruit and hire employees					
q2.3	delegate tasks and responsibilities to employees in your business					
q2.4	deal effectively with day-to-day problems and crises					
q2.5	inspire, encourage, and motivate my employees					
q2.6	train employees					
	Networker - (How much confidence do you have in your ability to identify and build relationship with...?)					
q3.1	governments and government agencies					
q3.2	philanthropists and charities					
q3.3	suppliers					
q3.4	customers					
q3.5	investment sources					
	Finance Manager - (How much confidence do you have in your ability to...?)					
q4.1	organise and maintain financial records of my business					
q4.2	manage the financial assets of your business					
q4.3	read and interpret financial statements					
	Bricoleur - (How much confidence do you have in your ability to...?)					
q5.1	find workable solutions to new challenges by using your existing resources					
q5.2	take on a broader range of challenges than others with your resources would be able to					
q5.3	use any existing resource that seems useful to responding to a new problem or opportunity					
q5.4	deal with new challenges by applying a combination of your existing resources and other resources inexpensively available to you					
q5.5	take action by assuming that you will find a workable solution when dealing with new problems or opportunities					
q5.6	put together workable solutions from your existing resources when facing new challenges					
	Communicator & Persuader - (How much confidence do you have in your ability to...?)					
q6.1	persuade individuals and organisations to get involved in your social cause					
q6.2	convince customers to adopt the innovation and change their status quo					
q6.3	cajole individuals to support your cause when they seem unwilling					
q6.4	induce financial support for your social cause					
q6.5	encourage suppliers to provide goods and services at minimal costs					

When Equilibrium Is Shaken, Not Stirred: Entrepreneurship In The Swedish Health Care Industry

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When Equilibrium Is Shaken, Not Stirred: Entrepreneurship In The Swedish Health Care Industry

Abstract

Sweden's social well-fare sector is well-known also outside Sweden. Due to the ongoing liberalization of primary health care service delivery in Sweden the industry is in flux. This paper examines entrepreneurs who contribute to the on-going process of institutional change in the Swedish market for health care service delivery. Institutional theory is applied and four in-depth cases are analysed in relation to how the entrepreneurs are challenged by (and cope with) institutional barriers as they develop and grow, and how they struggle to survive and remain innovative when they over time go from ignorant newcomers to established players in the field. Blocking mechanisms are identified that partly explain why the market has developed as it has, e.g. a closed window of opportunity, applying copying strategies, institutional barriers, and the collision of different logics. Those blocking mechanisms may jeopardize the intentions of the new law and actually reinforce structural hindrances for entrepreneurship in this new emerging market. The entrepreneurs contribute to piecemeal institutional change through successful venturing efforts and, albeit being less dramatic than big and more abrupt transformations, this can however be equally consequential for shaping substantive outcomes in the long run.

1 Introduction

A dimension of entrepreneurship is the breaking up of a monopoly market (Schumpeter, 1934). This is a unique situation, however, as most industries are acting on a free market. There are however exceptions, such as the health care industry, which in many countries is managed by the government and financed by public money. The health care industry in Sweden, however, is in flux due to the ongoing liberalization of primary health care service delivery in Sweden. There has in this respect been a gradual change in the last 15 years, from a relatively closed system to a more open and competition-oriented system that includes the private sector (Anell, 2005). As an example, Swedish citizens have since 2003 been given free choice in health care, which allows them to seek treatment anywhere in the country. The number of companies has also increased steadily and in 2007 the private health care industry employed about 100 000 persons, which accounted for about 15 percent of all people in the industry in mid-2000 (NUTEK, 2007). The law about primary choice system in primary care (LOV) was then subsequently introduced in January 2010, which entails patients choosing whether they would prefer to go to a private or public center as supplier of health care services (SFS 2008:962).

The on-going shift in Sweden implies that the monopoly of the health care industry is broken up and where a free market is in the process of being established. This is interesting in its own right since the health care industry is the largest service sector in Sweden and its development is important for a range of closely related industries, such as wellness, pharmaceuticals and medical technology. The breaking up of this monopoly, however, also includes a proclamation for new venture creation. The liberalization of the Swedish health care industry has been largely embedded in the political aim of increasing new venture creation efforts in the sector resulting in a diversity of firms offering publicly financed health care services. The hope, primarily from policy actors, has been that the diversity of private and public actors will lead to an increased competition, which will force innovations in the sector. However, the market has rather become characterized by a large bulk of very small actors on the one side and a few very large national players on the other side – and a few in the middle.

The changes in the Swedish health care industry can be seen as an on-going process of institutional entrepreneurship (i.e., Garud, Hardy and Maguire, 2007), where the institutional landscape is reshaped through new organizational and regulative models and policy shifts. The changes in the law can be understood as an institutional innovation, aiming at contributing to society at large in two principal ways (Austin, Stevenson and Wei-Skillern, 2006, p.2); first, by serving the general public by delivering publicly financed health care services in novel ways, and second, by changing and modifying already existing institutions in the health care industry.

Although entrepreneurship is expected to contribute to the health care industry, and thereby to society at large, there is an abundance of empirical studies informing about how entrepreneurs may fulfill such expectations through their venturing efforts and the challenges they may face during this process. Hence, we know little about the role of entrepreneurship in bringing novelty and institutional change to the health care industry. In light of this, the aim of this study is to better understand how private entrepreneurs contribute to institutional change in the Swedish market for health care service delivery.

To fulfil our aim we analyze the extent to which changes in laws and regulations open up new windows of opportunities that trigger entrepreneurs to enter the market, but also how their early venturing efforts are constrained and suppressed by the normative institutions that are deeply embedded in the health care system. Moreover, by analysing the development paths of these ventures we examine how they cope with institutional normative barriers by means of a repositioning process, where they first envision and then impose alternative futures that change institutionally embedded structures and activities.

The rest of the paper is structured as follows. In the next section we provide a literature review, where we discuss institutional theory and how we conceptualize health care systems as embedded in regulative, normative and cognitive institutions. Thereafter follows the method section where we present the details of our overall research design and the collection and analysis of case study data. This is followed by an analysis and a discussion of our findings. The article ends with a concluding section where the main findings are emphasized.

2. Institutional theory and health care

Organisations are embedded in institutional environments (DiMaggio and Powell, 1983; Greenwood and Hingings, 1996) where the goal is to stand up to standards of “desirable, proper, or appropriate [behaviour] within some socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995:574) and to conform to both institutional and technical pressure (Meyer et al. 1983; Scott and Meyer, 1983; Scott, 2001; Scott and Meyer, 1991). By tradition, the health care industry has been subject to high institutional control. The institutional control is normally considered to originate from state or other official organizations. This type of control mechanism lays stress on formal rationality and whether suitable procedures and structures are put in practice (Scott, 2001). The institutional control is hard to measure against a specific outcome. By breaking up the monopoly of the health care industry, it will compete on the open market and be subject to high technical control mechanisms. The previously public is transferring into meeting the technical control where the pressure is to conform and to be competitive within the market. Control is thus based on the output, such as quality and efficiency, and is related to instrumental rationality (Scott, 2001). The so called free market, exclusive of not-for-profit organizations, normally operates under very strong technical pressure and less of institutional constraints.

For new enterprises within the health care industry, playing according to the rules provides security since it creates legitimacy (Oliver, 1997). According to new institutionalism organizations within the health care industry that face change would be subject to isomorphism which is “*the process that forces one unit in a population to resemble other units that face the same set of environmental conditions*” (DiMaggio and Powell, 1983:66). New institutionalism rests upon the three pillars of regulative, normative and cultural-cognitive prescriptions and expectations (Scott, 2001). The three can be ranked from more explicit to less tangible guidance for the firm to conform; or from more rational to more unconscious choices to behave in order to meet the environmental pressure. Scott illustrates the three conceptions in the following table (Scott, 2001:52)

	Regulative	Normative	Cultural-Cognitive
Basis of compliance	Expedience	Social obligation	Taken-for-grantedness Shared understanding
Basis of order	Regulative rules	Binding expectations	Constitutive schema
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules, laws, sanctions	Certification Accreditation	Common beliefs Shared logics of action
Basis of legitimacy	Legally sanctioned	Morally governed	Comprehensible Recognizable Culturally supported

Table 1. Three Conceptions of Institutions. Source: Scott 2001:52; table 3–1.

The three pillars uphold organisations and provide legitimacy (Scott, 1995; 2003). Regulative processes involve rule setting of the organisation and how it is conformed to. The rules may be formal such as set by the law, as is the unique case here, or less formal as set by some informal mechanisms. The normative pillar moves away from the individual interest and towards social obligations (Scott, 1995; 2003). Normative processes include norms and values and thereby desirable acts and appropriate ways to behave in accordance with expectations. These expectations can be either role-, gender- or goal- defined or defined by social obligations and are morally governed. Even so, Scott (1995; 2003) stresses that norms and values are not mere constraints but also empowering means for social actions. By opening up the health care industry, traditional ways-of-thinking are challenged. Entrepreneurs who confront old ways of “doing things” most probably meet norms and values that date back to the normative pillar that governed the industry previously. Further, these notions of how to act and think on a more unconscious level may guide the entrepreneurs themselves.

The cultural-cognitive pillar refers to processes of making sense of social reality and to create shared understandings of this reality. In this process, the social construction of reality is encompassed (cf. Berger and Luckmann, 1966) where symbols, words, actions and the like are

interpreted and made sense of to such a degree that they become sedimented and taken for granted as a common frame of reference. For entrepreneurs within the health care industry it also plausible to assume that they still struggle with their deeply rooted identity as nurses, physiotherapists, medical doctors or the like rather than the identity as an entrepreneur. This has consequences for their role demands as entrepreneurs (Krueger, 2007; Shepherd and Haynie, 2009). The cultural-cognitive pillar is thus essential for the conception of our social and professional identity and how we adopt to cultural belief systems and cultural frames on a macro level (Scott, 1995; Meyer and Rowan, 1977, DiMaggio and Powell, 1983).

Bargaining processes are continuously taken place since institutions consist of both informal constraints (e.g. norms of behavior) and formal constraints (e.g. rules and legislations) (North, 1990). DiMaggio and Powell (1983) claim that organisations rely on mimetic processes in order to imitate others in order not to stand out too much whereas Weick's (1995) belief is that people are guided by their own actions at the same time as these actions are justified by past actions. Legitimacy, derived out of these three pillars constitutes a condition that reflects "cultural alignment, normative support, or consonance with relevant rules or laws" (Scott, 1995:45). It is noteworthy to stress that what is regarded as legitimacy is in the eyes of the beholder, i.e. it varies among actors, organisations, nations and cultures. Likewise, among them, the emphasis may vary from being mainly influenced by the regulative, the normative or the cultural-cognitive pillar. For the entrepreneurs within the health care industry mimetic processes are more or less to grope in the dark since there are no role models to mimic.

It is imperative that the emerging health care industry is seen in its context where it is dependent on mutual, yet contradictory relationships (cf. Friedland & Alford, 1991). The entrepreneurs are drawing and acting upon previous, as well as new regulatory, normative and cultural-cognitive logic. In addition, these entrepreneurs are drawing on their previous profession as nurses, therapists, medical doctors etc. and shall at the same time draw on the profession as entrepreneurs. They are thus subject to a set of logics that are contradictory, and perhaps competing since all institutions have their core logic (Friedland and Alford, 1991). Since an institutional logic is defined as "*the socially constructed, historical pattern of material practices, assumptions, values, beliefs and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality*" (Thornton and Ocasio, 1999:804) there is no new core logic to conform to or contend with. Therefore, there will be contradictory or competing logics also within the new logic until the core of the new institutional logic is formed. The organizations that are formed as a consequence of the paradigm shift to break up the monopoly will operate not only in existing institutional spheres of the public vs. the market logics but also within a re-contextualized institution of the health care industry that is, in addition, politically embedded. In line with Johnson et al., (2007) and Johnson, Melin and Whittington (2003) all actions taken by individuals on different levels are embedded in their own context (Jarzabkowski, Balogun and Seidl, 2007). All activities taken, and talks and thinking made will eventually become practices and form this new logic. Practices are thus all the social, symbolic and material tools through which this new logic is formed (cf. Jarzabkowski and Spee, 2009).

Primary health care systems are not simply mechanical structures that produce health care services but they can also be seen as social institutions that lie at the very core of the welfare state (Gilson, 2003). By tradition, the health care industry has been subject to high institutional control and by breaking up the monopoly of the health care industry it will compete on the open market and be subject to high technical control mechanisms. For new enterprises within the health care industry, playing according to the rules provides security since it creates

legitimacy (Oliver, 1997) resting upon the three pillars of regulative, normative and cultural-cognitive prescriptions and expectations (Scott, 1995). Even so, Scott stresses that norms and values are not mere constraints but also empowering means for social actions. By opening up the health care industry, traditional ways-of-thinking are challenged and there are no role models to mimic. The entrepreneurs are drawing and acting upon their previous regulatory, normative and cultural-cognitive logic at the same time as they are acting and drawing on the new regulatory, normative and cultural-cognitive logic. In addition, these entrepreneurs are drawing on their previous profession as nurses, therapists, medical doctors etc. and shall at the same time draw on the profession as entrepreneurs. They are thus subject to a set of logics that are contradictory, and perhaps competing since all institutions have their core logic (Friedland and Alford, 1991). Further, there is no new core logic to conform to or contend with. Therefore, there will be contradictory or competing logics also within the new logic until the core of the new institutional logic is formed.

3 Methodology

Innovation in the context of health care is often defined as something new with the potential to initiate change and renewal (Weberg, 2009). As has been stressed in the discussion above, there is in this respect multiple evidence of institutional change in the Swedish health care industry. This change has opened up opportunities for private actors to enter and develop the market. However, spotting and seizing opportunities for effectuating change and renewal in a system is also very much a question of individual agency, where entrepreneurially minded people challenge existing institutional structures and thereby break down barriers and push frontiers (Cliff, Jennings and Greenwood, 2006). While the literature has documented reforms and developments in the Swedish health care system (i.e., Anell, 2005; Anell and Glenngård and Merkur, 2012) there have been very few studies that examine institutional entrepreneurship and change from the actors' point of view. Thus, to better understand the role of entrepreneurship in the process of institutional entrepreneurship in the Swedish health care industry we see a need for more actor-centred studies of these issues.

It is known that in most industries it is the small actors who innovate; in the health care service industry the small actors seem to be too small to innovate, instead they have been bought up by larger actors, thereby the large actors have been able to increase their market shares. Also, most of the small actors are solo-entrepreneurs running the business as a side-line activity or having only a few clients. Taking this into consideration we have in this study focused on cases that we, according to the Swedish market, consider middle sized.

The four cases were selected on a purposeful basis (Miles and Huberman, 1994) in order to capture the process in real-time (Brundin, 2007). For the analysis we relied on an interpretive approach (Burrell and Morgan, 1989) where the empirical material was arranged so that we saw patterns, however we also looked for the peculiar. In our analysis we were guided by the theoretical framework presented above. First we analysed our case material from each case in order to gain deep understanding of the institutionalization. Second we conducted cross-cases analyses in order to compare and confirm the patterns we observed in the first analysis aiming at conceptual insights. Third, with our preliminary findings at hand we went back to our cases and conducted additional interviews. Fourth, our conceptual insights ended up in a number of possible blocking mechanisms (cf. Eisenhardt, 1989; Whetten, 1998).

3.2 Data collection

A primary source of data in this study is personal interviews conducted with the founders of each respective case firm. This data was collected between September 2011 and August 2012. The interviews were following a semi-structured guide and they were all recorded and transcribed to enable systematic analysis. The duration of the personal interviews ranged from 1-2 hours. Data validity was ensured by verifying and cross checking information from the interviews with information from other publicly available sources. We also used information from a wide range of other sources to utilize the full potential of a case study design, including annual reports, press releases, policy reports and articles from Swedish newspapers.

3.3 Analysis of case evidence

We have been following a systematic inductive process when analysis our case data (Eisenhardt, 1989). First, we analyzed our empirical data case-by-case in order to gain a deeper understanding of the specific context. The core of this analysis was represented by information and experiences provided by the respondents, verified by information collected from other sources. Thereafter, we conducted cross-case analyses in order to move from specific observations and to detect patterns and regularities. Whenever possible, we condensed the data into displays and tables to reduce the large amount of information and enable graphical presentations of the relationship between events and decisions. Based on our preliminary findings, we then went back to our case firms and conducted additional interviews to compare and confirm the patterns we observed in the first analysis. This procedure led to that we finally ended up in some general conclusions and tentative propositions. A cross-case analysis was then performed to establish if observations were unique to the individual case, or if they represented a trend across the entire sample on one or several parameters of interest (Miles and Huberman, 1994).

4 The empirical material

4.1 Description of the four cases

In this section, we present a general description of the four cases. They all have their primary operations in human health activities. The cases are moreover at different stages of development and represent different parts of the health care industry, such as orthopaedics, elderly care, midwifing and audiology. An overview of each case is shown in Table 2.

	Orthos	Nursing	Hearing Aid	Midwife
Founding year	2001	2005	2005	2011
Number of founders and gender	Three men	Two women	One woman	Two women
Educational background	Two orthopaedics and one anaesthetist	Two nurses	One audiologist	One nurse and one midwife
Industry classification ⁹¹	86212, 86905	87201, 87301	86909, 47740	86903, 96040
Description	Human health activities; specialist medical practices	Human health activities; residential care activities	Human health activities; human health establishments	Human health activities; human health establishments

Table 2. Description of case firms

4.1 Orthos

Orthos started as a private company in 2001. The idea was in the beginning to create a leisure practice for sports injuries, financed through a health contract with the county board. The customers has since 2004 been provided with a modern specialist hospital with a broad competence and experience in treating injuries and disorders of the joints, muscles and bones. The company has been a pioneer in breaking many “taken-for-granted” practices and they have reduced traditional hierarchies when organizing their own “chain of care.”

The company was started by two orthopaedics and one anesthetist employed by the regional hospital. They spotted an opportunity to provide extra orthopedic surgery in evenings and on weekends. Initially, the three founders rented operating theatres in the hospital where they worked. However, the business gradually expanded and in 2004 the company developed into an own independent unit. In 2005 the three founders quit their employments as physicians working for the regional hospital and instead they started to focus on their company in full.

All treatments has since 2004 been conducted in their own facilities but in close cooperation with the public health care system. The facilities include three operating theatres, one recovery area and four examination rooms. In 2006, the company added a newly renovated ward for 20 patients, with some of them dedicated for advanced surveillance. In 2008, the hospital was also adding a unit for radiology connected to the general health care system. The close cooperation with the nearby county hospital was described by one of the founders as follows:

⁹¹ Industry Classification Key: 47740 - Retail sale of medical and orthopaedic goods in specialised stores; 86212 - Other general medical practice activities; 86903 - Primary health activities (not physicians); 86905 - Activities of physiotherapists etc.; 86909 - Other human health activities; 87201 - Care in special forms of accommodation for persons with mental retardation and mental disability; 87301 - Care in special forms of accommodation for the elderly; 96040 - Physical well-being activities

“We have a cooperation contract with the hospital, where we cooperate when it comes to competence building and education, and also medical material. If there is anything that is missing while we are working, then we can call them for supplies, and they can call us as well and borrow things.”

The company has the past years seen growth as a natural thing, although it has not been an expressed goal. Rather, the business has expanded naturally as the market has developed. Between 2006 and 2009 the company reported a sales growth of 167 % and an employment growth of 96 %. This led to that the company was recognized as a high-growth firm in 2011. In the same year, a much larger actor operating on the private health care market acquired the company. The three founders are since this ownership shift working in the company as employees. Today the company employs about 70 people.

4.2 Nursing

Nursing started as a private company in 2005 by a team of two professional nurses. Previously they had been working together with palliative care in the public sector and acted then as intrapreneurs. They were challenged by the idea to start their own business and considered themselves to have the knowledge, experiences and networks.

Initially they bought two nursing homes. One focused on dementia care and eldercare while the other focused on mental care where patients can stay for shorter periods. Until recently, their business has consisted of three nursing homes; the third with the same focus as the other two. When the customer choice model was implemented for primary health care, in 2009, they started up a primary health care clinic. They offer a one-stop-shop, and apart from medical doctors, nurses and administrative personnel they employed a physiotherapist, a social welfare officer and an occupational therapist – who together can meet the patients. They consider it profitable to employ these professions, instead of using them as suppliers. In 2011 they opened up a second health care clinic. Furthermore, during the establishment of the firm they have had the opportunity to use the different competences in the different businesses (nursing homes and health care clinic). Today they also offer maternity welfare and child welfare at the clinics. Apart from offering a one-stop-shop for all different phases in life, an argument for having maternity welfare and a child welfare center is that they have the opportunity to meet and interact with healthy people. When offering primary health care it is primarily the sick people who seek contact and who decide to list themselves at the clinic. And, economically, the sick people are the ones who cost in the system. To create an economically sustainable business it is important to also be able to sign up health people.

Both of the founders consider themselves to be entrepreneurs; when they quitted working as acting nurses and instead actively started to work with running the business they left their previous professions. Both had experiences from working as managers when they were publicly employed, already then they felt that they left the profession. But, it is an advantage of having the nursing skills they say. As they are nurses they are quite unique in the context they interact with; almost all private primary health care clinics are funded and managed by medical doctors. They are part of an industry organization for entrepreneurs who have primary health care clinics; and they are the only nurses in the group. This specific organization will not include midwives or physiotherapists; they have decided to keep the group for primary health care clinics.

In autumn 2012 sold the three nursing homes. Initially they planned to only sell the buildings, as they did not consider themselves to be in the real estate business. Taking care of the buildings

was quite expensive and demanded that they had caretakers employed. When they had identified a buyer of the buildings it turned out that the new owner knew an entrepreneur in the health care industry and they considered selling this part of their business. They decided to put this part of the business out on the market, and in the end they decided to sell to the entrepreneur the new owner of the buildings had introduced to them. Today they have a small stock in his company. The buyer is a smaller actor on the market, i.e. not one of the really big venture capital owned firms.

4.3 Hearing Aid

Hearing Aid started as a private company in 2005. The idea was to provide hearing aid, hearing protection and other kind of hearing facilities to customers provided by legitimized audiologists. The market offer was based on a high service level and a broad variety of different solutions to various hearing problems. At the time, this was something that broke against the long waiting time and rather limited supply of hearing aids in the publicly financed health care system.

The founder of the company was a woman who had a career as a chief audiologist in different hospitals in Stockholm. In her work she experienced that many people were not satisfied with their hearing aids at the same time as she could follow all the improvements in the technologies that now were available. In addition, she also felt that the organization she was currently working in were too bureaucratic, slow and occupied with other things than listening to customer demands. The situation was described as follows:

“You are transformed into a remittance in the public county hospital. At our company you are a person. You are recognized in the waiting room and this whole service orientation is influencing whether someone is willing to pay anything in the end. That [the high service orientation] is all that matters.”

The founder was in the beginning planning to be on her own. She travelled to various places in and around Stockholm setting up her office on a daily basis with all equipment in her bags. However, an occasional advertisement on the web led to a call from Denmark that were interested in hiring an audiologist in Denmark a few days per week. The founder who had experience from working with personnel issues from her previous employments had a good network of audiologists and could easily recruit someone who could do the work. After this, she recruited some people to help her with operations in the Stockholm area. The demand continued to grow and other recruitments were soon to follow. The recruitment strategy has all the time been very conscious and only people known by the founder have been employed. In 2007, the founder was accompanied by another owner, which complemented the management team with a business background. The founder commented on the division of labour resulting from the changes in ownership:

“He took care of marketing and the financial issues, which are areas that I am not very good at. I took care of the audiologist parts.”

The company is still heavily committed to provide customers with the latest and most advanced hearing aids on the market. In general, there has always been a strong focus on being generous to customers and allowing them to take their time in finding out what technology they need and what they really want. They work closely with leading manufacturers in Europe and USA to get access to new technology and to keep prices low.

The company has experienced a continuous growth during the past years, something that has been expressed by the founder as something that more or less has “just happened” as the market has grown with them. Between 2006 and 2009 the company reported a sales growth of over 900 % and employment growth of about 500 %. This led to that the company in 2011 was recognized as a high-growth company. Today the company has 23 employees and with permanent offices in 16 cities and towns across Sweden. The company is moreover open for a new owner with financial muscles and the current owners are looking for possible candidates.

4.4 Midwife

Midwife started as a private company in 2005. The idea of the company was initiated when it became official that a customer choice model should be implemented on maternity welfare. At the time one of the founders of the company was working as a nurse in the local public hospital as a manager for the women’s clinic. As a manager she prepared for the accreditation of the clinic. During the process it became clear that maternity welfare should be placed under primary health care and not at the hospitals (offering specialist care). She asked the publicly owned primary health care clinics if they would apply for accreditation, and got the answer that they were not prepared for that. Knowing this, she and her colleagues decided to start their own firm.

The company employs ten midwives, it has two owners; one of the owners is a nurse and one is a midwife. They have three clinics. They received financial support from a regional support agency – and as a supplement they took a loan in the bank. When they started they got business counseling, and they attended a course in entrepreneurship. Running their own firm implies that they have the opportunity to do things in a different way compared to when they were publicly employed. Furthermore, as a private actor they are allowed to sell complementary services on the private market, which public actors are not allowed to do.

Some of the midwives have competence in ultrasound examinations, which implies that they have their own equipment. They also perform acupuncture treatments, offer water aerobics for pregnant women, courses in prophylaxis breathing, and conversational therapy for those who are afraid of giving birth. A lead word is flexibility, they want to offer high accessibility, flexible opening hours, short waiting times, and they want to fulfill the needs of each individual woman.

One of the founders has been working as an instructor in water aerobics and in baby swimming, which makes it possible for them to sell those services to their customers. So far, they have offered water aerobics but they will start offering baby swimming, at least the first course. They argue that by offering courses in baby swimming they offer an arena for the mothers to meet and interact after having given birth. The philosophy behind water aerobics is that it increases the physical fitness, the mothers get knowledge about their bodies and they train breathing. Another service that they sell is massage for pregnant women.

5 Analysis and discussion

In this section, we present the main findings from our inductive case data analysis. Guided by the work of Scott et al. (2001), we structured our analysis according to the following questions: i) how regulative institutional change open up new windows of opportunities in the health care industry, ii) how venturing efforts are constrained and suppressed by institutional normative barriers embedded in the health care system, and iii) how clashes between old and new institutional conditions result in shifts in cognitions and perceptions. Moreover, we have

utilized the full strength of an embedded design by analysing how the institutional set-up operates at multiple levels (Yin, 1994), thus allowing us to discuss findings in relation to actors and structures in the micro-, meso- and macro institutional environment.

We have also in line with our theoretical interest in institutional entrepreneurship and change employed an actor-centered institutional approach in our analysis (Scharpf, 1997; Aguilera and Jackson, 2000), which allows us to integrate both the action-theoretic perspectives that often are found in the entrepreneurship literature with our overall institutional perspective. By doing this, we emphasize, in the spirit of Scharpf (1997, p. 1), that:

“...social phenomena are to be explained as the outcome of interactions among intentional actors (...) but that these interactions are structured, and the outcomes shaped, by the characteristics of the institutional settings within which they occur.”

Thus, we are in our analysis focused on the role of individual agency, where entrepreneurship both shape and are shaped by institutionally embedded structures and activities.

5.1 Regulative institutional change

The health care industry has been subject to several political reforms in the past two decades, something that has resulted in changes in laws and regulations. These reforms can from a theoretical perspective be seen an enabling force that has opened up new windows of opportunities (Harvey and Evans, 1995) in the health care industry. Moreover, the opportunities operate and materialize at several levels. First, the reforms have resulted in new career opportunities at the micro level. This relates to the possibility for individuals working in the health care industry to choose between a private or public employer, but also to the possibility to be self-employed and become a private actor on the market by pursuing an entrepreneurial career (Dyer, 1994) by their own means. This development has resulted in increased competition in the health care labour market, thereby influencing working conditions and salary levels.

Second, the reforms have created new and expanded market opportunities for private actors at the meso (firm) level. Acting on the health care market as a private actor means that the firm is governed by other rules and regulations than public actors. Private actors acting are in this respect allowed to act as suppliers to other firms and they can also sell services directly to private customers, something which is restricted for public actors. For example, a private firm offering maternity health care services can decide to market and sell extra ultra-soundings and additional tests for foster diagnostics. Or they can start offering water aerobics for pregnant women or courses in prophylaxis breathing, and they could expand and diversify their business by start selling products related to newborns. Public actors, on the other hand, are not allowed to sell any products or services to private customers, neither are they allowed to act as suppliers for private firms, hence being highly restricted.

Third, through the provision of opportunities for private actors to enter and develop the market, the reforms have also provided opportunities for innovation at the macro level by opening up alternative ways of organizing and conducting health care services in the sector (Weberg, 2009). In this respect, the overall ambition among the cases has been to create something new rather than replicating existing enterprises or practices. In this way, the companies they created has not been an end in itself, but a mechanism (or a mean) to make their ideas of how to provide better health care into reality (Sarasvathy, 2008).

Interestingly, our case evidence also suggests that the decision to engage in entrepreneurship and become a private actor on the market was not initially triggered by these available opportunities. Rather, the choice were triggered by a much more personal feeling that the current way of doing things in the organization they were currently working in was building up barriers that did not benefit the patient in the end. This feeling led respondents to combine their expertise and their social mission in efforts to become an entrepreneur in response to the opportunities that existed. As such, our findings emphasize that even if the emergence of opportunities is a prerequisite for entrepreneurship to occur this is not enough to explain entrepreneurial action. Rather, entrepreneurship emerges in the interplay between a favorable opportunity climate and individuals with an interest and capacity to identify and take advantage of these opportunities (e.g, Shane, 2003).

5.2 Normative institutional barriers

Our case evidence also suggest that the entrepreneurial actions of private actors in many ways are constrained and suppressed by the norms and values that exist in the medical and health care professions in Sweden. These norms are related to the idea of distributive justice that is deeply embedded in the Swedish health care system. The existence of normative barriers can in this respect be linked to how health care is supposed to be organized and who is a legitimate provider of such care. At the micro-level, we found evidence of such barriers when individuals during their venturing efforts were supposed to be loyal to their profession, which include accepting their place in the social or professional hierarchy. For example, when the founders of Orthos were still employed by the county hospital while renting surgery space in the evenings and weekends, they were constantly hearing that their entrepreneurial behaviour was not appropriate, especially at their young age. A related normative institutional barrier operating at the meso level was the widespread attitude that private firms are primarily profiting on health problems. Although existing across all cases, this was especially evident in the case of Hearing Aid who several times faced harsh critique from professionals employed in public hospitals when offering their products and services to customers at market price. In a similar vein, there were beliefs that private actors would perhaps lead to some degree of novelty, but at the cost of a safety and control loss in the sector.

However, while these normative institutional barriers act as a potential impediment to entrepreneurship in the health care industry there is also an opposing institutional logic that counterbalances their potential constraining and suppressing effect. This institutional logic is based on the norm of the private market, which has been introduced and supported through the various legal reforms aimed at making the health care market more efficient and cost-effective. While the traditional non-market norms in the health care system emphasize access to services on the basis of need without any regard for compensation, the private market norm is on the other hand based on commercial criteria and cost-benefit analyses of how to best use resources. The norm of the private market consequently provides an alternative perspective on health care provision governed by supply and demand. This duality provides entrepreneurs with two alternative and competing logics in the system. Hence, even if entrepreneurs can be highly embedded in traditional institutional non-market norms in their daily practice, they also seem to benefit from the duality of norms for legitimizing their own venturing efforts. Moreover, the reliance on the market norm to justify action seems to be strengthened over time, when a company experience success in the market and grow bigger. Thus, it seems that small gains reinforce initial venturing efforts with reference to the private market norm, hence orchestrating and fuelling further entrepreneurial actions, and vice versa.

5.3 Cognitive repositioning process

A highly interesting issue in relation to the normative barriers that exist to entrepreneurial action is the clash between the traditional norms that is embedded in health care professions and the new market norm that have been introduced by legal reforms. Our case evidence however not only provides insights into the clash between “old” and “new” norms, but it also suggests how this clash results in gradual shifts in cognitions and perceptions among actors operating in the health care sector. It is in this respect important to emphasize that the self-reproducing properties of institutions are largely cognitive in nature (Zucker, 1983; Mahoney and Thelen, 2010), which means that actors *first* interpret and *then* carry on forward across various domains. Interpretations can in this respect blindly reproduce “taken-for-granted” behaviour (DiMaggio and Powell, 1983) where new institutions take the same form as old ones. However, processes of interpretation are sometimes also surrounded by dynamic elements that open up for and permit change to happen.

Institutional change often occurs when problems of rule interpretation and enforcement open up space for actors to implement existing rules in new ways (Mahoney and Thelen, 2010, page 4). In our analysis, we found that the private entrepreneurs reposition themselves during their venturing process, from identifying themselves primarily as health care professionals towards (also) becoming businesspersons. This repositioning process was also related to the meso level, where successful case firms were increasingly building an image as providers of specialized health care solutions. These developments also resulted in a slightly changed attitude towards entrepreneurs in the sector, where public actors over time were seeing entrepreneurs not as competitors but more as complementary actors that sometimes can better serve specialized segments of the health care market. This slow, but gradual development of an institutional logic in the Swedish health care industry that favour private actors seems in this respect to be the result of a situation where “old” and “new” groups struggle over the meaning, application and enforcement of changed institutional conditions. While piecemeal and incremental, such shifts may over time add to a more substantial systemic transformation of norms and values in the health care industry.

6 Conclusions

To answer the aim - to better understand how private entrepreneurs contribute to institutional change in the Swedish market for health care service delivery – we examine how entrepreneurs have acted on changes in laws and regulations, changes that have opened up new windows of opportunities (Harvey and Evans, 1995). Moreover, we identify how their venturing efforts are constrained by normative institutions that are embedded in the health care system. Furthermore, we provide an analysis of how they struggle over the meaning, application and enforcement of new institutional rules. These contributions can be contrasted against previous studies that to a large extent have focused on how innovations are diffused in the health care industry (i.e., Weberg, 2009; Thakur, Hsu and Fontenot, 2012), while leaving the entrepreneurial processes that initiate innovation and change institutionally embedded structures and activities largely overlooked.

Our findings suggest that legal reforms have lead to institutional regulative changes in the Swedish health care industry, which in turn have opened, up windows of opportunities at multiple levels. However, our analysis also suggests that even if such structural changes are a prerequisite for institutional entrepreneurship and change, it is not enough with a favorable opportunity climate to make things happen. Instead, what will fuel the entrepreneurial process

are intentional individuals with motivation and ability to take advantage of the opportunities that are created (Shane, Locke and Collins, 2003). As such, based on our findings we contend that there is a need to understand both the agents as well as the opportunities to which they respond to better understand triggers for entrepreneurship in the health care industry.

Another main finding in our study is the presence of two largely competing institutional logics that shape the cognitions and behavior of actors within the system. While the dominant non-commercial logic that is embedded in the sector is producing normative barriers against entrepreneurial behavior, its potential repressing effect is counterbalanced by the presence of the norm of the private market. This norm, which have been introduced and nurtured through various market reforms, is providing an alternative perspective on health care provision. The norm of the private market is not only used to parry non-commercial normative complaints by legitimizing entrepreneurial action, it is also increasingly used as base for decision making when the company is growing bigger. Hence, we conclude that the presence of the private market norm plays an important role for the ability of entrepreneurs to cope with existing institutional normative barriers and to legitimize their own venturing efforts.

A third main finding in our study is the critical role of the cognitive repositioning process among entrepreneurs for shaping the cognitions and actions of actors in the longer run. This repositioning process is not only favouring the development of their own identity as businesspersons, but it also plays an important role in changing and shaping institutionally embedded structures and activities that prevail within the system. Mahoney and Thelen (2010) emphasize that institutions often change in subtle and gradual ways over time. Such slower and more piecemeal changes may be less dramatic than big and more abrupt transformations, but they can be equally consequential for patterning human behaviour and for shaping substantive outcomes. Largely in line with these ideas, we conclude that entrepreneurship is a process contributes to gradual institutional change in the Swedish health care industry by opening up space for actors to implement existing rules in new ways.

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Bidirectional Knowledge Sharing In Family Firms

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Bidirectional Knowledge Sharing In Family Firms

Abstract

This paper examines intergenerational knowledge sharing within family firms in a traditional industry. We argue that knowledge sharing is bidirectional whereby the incumbent generation (IG) and their following next generation (NG) each present valuable knowledge bases that have the potential to generate innovative outcomes and change. Our findings clarify the interplay of knowledge sharing between the IG and NG and illustrated through Nonaka and Takeuchi's SECI model. We discuss the benefits of encouraging bidirectional knowledge sharing in an intergenerational family business and the importance of understanding how this knowledge can be shared and utilized within the family firm. We share our insights through a positive organisational lens which seeks to explore what works well in an organisation.

Introduction

Sharing of knowledge is a central activity in most firms, but particularly so in family owned firms. Transferring tacit, complex knowledge, or "family wisdom" across the family business is essential for the survival and development of the firm to the benefit of future generations ([Trevinyo-Rodríguez and Bontis, 2010](#)). Several studies engage with issues related to the sharing of the incumbent's knowledge, often framed as mentoring ([Distelberg and Schwarz, 2013](#); [Fiegener, Brown, Prince, and File, 1994](#)), or the accumulation of knowledge ([Chirico, 2008](#)), with new family members and/or generations entering into a leadership role in the family firm. These studies mostly explore one directional knowledge sharing from the incumbent generation (IG) to the next generation (NG) and omit investigating issues related to knowledge sharing originating from the NG entering into the leadership of the family firm. The underpinning argument for this bias is the belief that IG holds deep smartness ([Leonard and Swap, 2004](#)) in the form of practical knowledge acquired from running the family firm. This experience based knowledge will often be in the form of tacit knowledge ([Nonaka and Toyama, 2007](#)), and will be the source of competitive advantages for the firm ([Nonaka, 2007](#); [Nonaka and Takeuchi, 1995](#)). In this paper we will argue that the NG coming into a family firm will increasingly bring along a valuable knowledge base, for example, from a formal education and/or work experience and from organisations inside and outside their home country. This new knowledge will typically have the potential to generate innovative outcomes and change in the family firm and it is important to understand how this knowledge can be shared and utilized within the family firm.

To understand knowledge sharing as a bidirectional process it is important to look into the unique characteristics of the knowledge bases held by IG and NG and how these particular characteristics of the knowledge base impact the process with which their knowledge can be shared. Tensions between the two can result in hoarding and/or rejecting knowledge ([Husted and Michailova, 2002](#)). While these factors may have a detrimental effect in any organization, motivation in a family firm to mitigate knowledge sharing hostility is typically stronger. The reasons behind this could be various, for example to develop and maintain a common vision ([Hubler, 2009](#)), and to ensure future ownership and long-term orientation ([Lumpkin and Brigham, 2011](#)). However, the issue of reliance on a shared understanding of the content of knowledge between those transmitting and those receiving the knowledge still remains ([Husted and Michailova, 2002](#)).

We organize this article as follows. We begin by outlining the theoretical underpinning by grounding our research in extant family business and knowledge management literature. Then, an outline of the research process including the methodology utilized, the industry context and selection of family business case sites. We present our findings from across the

case sites providing examples of the different knowledge bases and then focusing on examples of where the NG has utilised their knowledge. This is followed by a discussion highlighting the contributions of our research, concluding with implications and future research opportunities.

Theoretical underpinning

Various compendiums have defined and reviewed the family business research agenda, recognising there are a number of topics yet to be explored ([Chrisman, Kellermanns, Chan, and Liano, 2010](#); [Craig, Moores, Howorth, and Poutziouris, 2009](#); [Debicki, Matherne III, Kellermanns, and Chrisman, 2009](#); [Dyer Jr and Dyer, 2009](#); [Holt, Rutherford, and Kuratko, 2010](#)). Building on previous research we simply consider family businesses as such if they are owned and managed by family members ([Sharma, Chrisman, and Chua, 1997](#)), which could be a partnership between spouses or siblings, and across generations ([D. Miller, Steier, and Le Breton-Miller, 2003](#)). We focus on family businesses that are intergenerational, that is with more than one generation from the same family currently owning and/or managing the business. This is supported by a number of researchers who consider family businesses to be focused on the long-term with motivation to pass their business to the next generation ([Chua, Chrisman, and Sharma, 1999](#); [Handler, 1989](#); [Ward, 1987](#)). For the most part, family businesses lean toward being motivated to succeed into the next generation, and this is where we see the potential for innovation events to occur between generations which may never otherwise come to fruition. It is the diversity between generations, with their diverse knowledge bases, that we consider a rich source for discovery and where there is potential to stimulate innovation. We understand succession to be a bellwether topic and an ongoing concern for family firms, however we realise that the paucity of research around the management of knowledge during this process beckons closer investigation.

Knowledge management

Knowledge management is not widely discussed in family firm literature although some existing research explores knowledge as an important dynamic capability ([Chirico and Salvato, 2008](#)), a strategic resource ([Cabrera-Suárez, De Saá-Pérez, and García-Almeida, 2001](#)), a source of competitive advantage across generations (Cabrera-Suarez et al., 2001), particularly where there are strong relationships and connectedness resulting in information and knowledge sharing, and learning ([Trevinyo-Rodriguez and Tàpies, 2006](#)). Examination of knowledge sharing in particular has been obscure in family firm research. This is somewhat surprising considering family firms tend to strive to maintain knowledge long-term within the family ([Cabrera-Suárez, et al., 2001](#)).

Knowledge sharing

Shared norms and values are generally expected to be conducive to knowledge sharing. However, Trevinyo and Bontis (2010) found that within family firms the interaction leading to shared norms and values has a stronger kind of effect on individuals i.e. in the form of emotions, which can have both a positive and negative effect on the knowledge sharing process. For example family rivalry has been suggested to reduce the willingness of the incumbent generation (IG) to pass experience based knowledge on to the next generation ([Lansberg, 1999](#)). On the other hand, the sense of identity in family firms and “familiness” ([Habbershon, Williams, and MacMillan, 2003](#)) can, when rivalry and conflicts are avoided or dealt with ([Eddleston and Kellermanns, 2007](#)), lead to a unique social system with frequent informal conversations enabling transfer of firm specific experiences and knowledge ([D. Miller, Steier, and Le Breton-Miller, 2006](#)).

Many family firms belong to traditional industries including primary industries and manufacturing where knowledge tends to be deeply rooted in well-established practices and developed through trial and error learning processes ([Hirsch-Kreinsen, 2008](#)) and their knowledge base is often characterised as “accumulated internal knowledge” ([Hirsch-Kreinsen, Jacobson, and Robertson, 2006, p. 11](#)). Core knowledge will in some family firms be intertwined with family traditions and ideological views ([Treviño-Rodríguez and Bontis, 2010](#)). Particularly in traditional industries, the IG would have more than likely spent time as an apprentice without significant formal training. It would not be unusual to follow in the footsteps of the previous generation especially where there was certainty around employment. This knowledge is mostly stored in the form of tacit knowledge ([Nonaka and Takeuchi, 1995](#); [von Krogh, Ichijo, and Nonaka, 2000](#)), which can only be shared if the individual possessing the knowledge engages actively in the sharing process, for example, by articulating her knowledge or guiding others in an apprenticeship or in a coaching situation ([Nonaka, 2007](#)). The valuable knowledge in family firms will additionally be stored in a tacit form and often being held by only a few individuals in the IG ([Zahra, Neubaum, and Larrañeta, 2007](#)). As tacit knowledge is very resource demanding to share, combined with the fact it is only in the heads of a small number of individuals, a bottleneck situation can occur in family firms, where knowledge is not shared sufficiently and efficiently.

The accumulation of knowledge in a few individual family members simultaneously increases the consolidation of power and control ([Zahra, et al., 2007](#)). A strong asymmetry of power in an organisation can result in increased reluctance by individual members of the organisation to share or to accept shared knowledge ([Husted and Michailova, 2002](#)). When family members either intentionally or unintentionally withhold information and knowledge from other members decision-making activities are inhibited, leading to an increased risk of family firms ignoring innovation opportunities and alternative views ([Kellermanns and Eddleston, 2004](#)).

Bidirectional knowledge sharing

For family firms to properly develop the NG need to add new knowledge gained through education and personal work and experience from outside the family firm ([Cabrera-Suárez, et al., 2001](#); [Kellermanns and Eddleston, 2004](#)). This knowledge base of the NG is, contradictory to the tacit, experience related knowledge base of IG, often based on explicit research-based knowledge acquired from university training or firm specific knowledge from other organisations which the NG has internalized ([Nonaka and Takeuchi, 1995](#)), through their careers outside the family firm. Since the power and decision authority is typically consolidated with a few individual family members from the IG the new knowledge from the NG will need to be shared with the IG in order to be actioned in the family firm. This knowledge flow from NG to IG is challenging for many family firms for several reasons: a) there are often differences in key characteristics of the knowledge base, for example the tacit-explicit dimension calls for different practices for sharing knowledge. Often the family firm will only have developed practices if at all for sharing intergenerational knowledge in one direction from IG towards NG; b) differences in validation criteria. IG will typically rely on a deep experience based knowledge and experiments to assess what works and what does not whereas the NG knowledge is either relying on intra scientific criteria or on the validation mechanism of other organisations; c) traditional industries often lean toward path dependency which can cause significant inertia with the direction of innovation activities ([Hirsch-Kreinsen, Hahn, and Jacobson, 2008](#)). Path dependency based on an organisation’s existing knowledge base can determine that organisations ability to assess new knowledge and how it might be used for innovation. As a consequence, change inducing knowledge found external to an organisation could have little effect due to the existing knowledge base largely

determining the orientation and expectation of viable innovation ([Cohen and Levinthal, 1990](#); [Hirsch-Kreinsen, et al., 2008](#)).

The wine industry, the industry context of this study, is no exception with its long history and certain fundamental processes that occur in the production of wine. However like many traditional industries, boundaries are pushed with the introduction of new and evolving science and technology which is either implemented as a trial or a new practice or process. For example, where there may not have been a formal education for winemaking 100 years ago, there are now programmes for viticulture and oenology, or wine science, incorporating international practices. There can be a number of implications when this knowledge is implemented, for example practices can be moved horizontally. This is important as there can be a potential innovation event with the introduction of new knowledge from the NG. The extent that the IG accepts new knowledge from the NG can differ between family businesses. However it is this interplay of knowledge sharing between the incumbent and next generation which can have an impact on the way innovation is stimulated within a family business. We consider knowledge sharing between generations as *obverse* when the IG is the source of ideas while the NG is the receiver. This is seen as the traditional model for the flow of knowledge. *Reverse* knowledge sharing occurs when the NG is the source of ideas while the IG is the receiver. The interplay of knowledge between obverse and reverse knowledge sharing is what we determine as bidirectional (refer Figure 1).

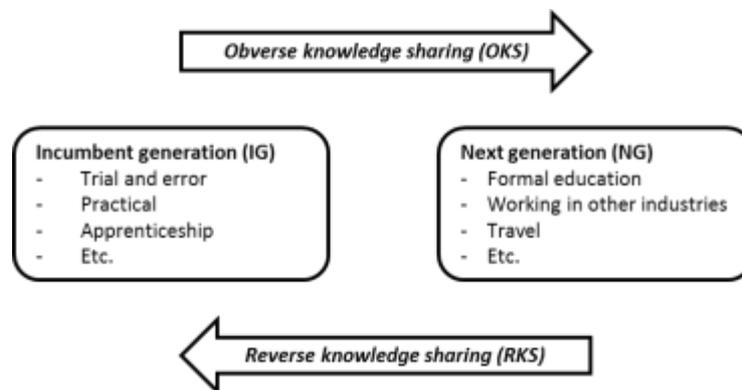


Figure 1: Different knowledge bases and flow across generations in a family business

Methods

Research lens

Recently, there was an appeal by various scholars to adopt a positive organisational lens in family business research ([Ceja-Barba, 2014](#); [Sharma, De Massis, and Gagne, 2014](#)). With a few exceptions ([M. G. Miller, Fitzgerald, Murrell, Preston, and Ambekar, 2005](#); [Poza and Messer, 2001](#); [Woodfield, 2012](#)), a positive organisational lens has not been engaged with by family business researchers. We intend to emphasise what works well in an organisation by asking questions that “apprehend, anticipate, and heighten positive potential” ([Cooperrider, Whitney, and Stavros, 2008, pp. 2-3](#)). The positive lens distinguishes this study from those that seek issues and problems within the firm, sometimes referred to as deficit-orientated approaches ([Cooperrider, et al., 2008](#)).

Industry context

Given our focus on traditional industries, that is, industries that are typically considered low to medium tech according to the OECD classifications, the winegrowing industry was considered a rich context in which to conduct the study. The winegrowing industry has a number of characteristics that lean toward an innovative environment. For example, there is a

long history of winegrowing in a number of countries and it is known that throughout this history winegrowers have been innovative. For example they have produced science, technology, and processes that are utilised by other industries, such as pasteurisation ([Johnson and Robinson, 2007](#)). Noteworthy is the broad commodity chain including the procurement of land through to the promotion of the product and management of the brand, and finally the distribution. In particular, New Zealand has proven to be innovative in this industry with examples from the growing methods such as harvesting and pruning techniques, organic and biodynamic practices, through to the development of technology that the industry carries, for example pruning equipment, bottle labelling and closure technology, to mention a few ([Stewart, 2010](#)). Furthermore, over the past centuries winemaking globally has had a renaissance where science and technology has advanced the traditionally practice-based industry and knowledge has considerably increased through formal education ([Johnson and Robinson, 2007](#)).

Although a small industry on the world stage, the New Zealand industry possesses winegrowers that are comparable in size with other winegrowing countries around the world. Family businesses are prevalent in the New Zealand winegrowing industry with about “90% of its 700 wineries and virtually all of the 1000 plus independent grape growers being small, family-owned businesses” ([New Zealand Winegrowers, 2011, p. 3](#)). Importantly, we are not alone in choosing the wine industry as a rich context for studying family businesses ([Chirico, 2008](#); [Jaskiewicz, Combs, and Rau, 2015](#)). In particular we find family wine businesses hold considerable knowledge from a history of winemaking and a culture where the next generation typically spends time outside the family business before returning with new experiences.

Case selection, interviews and collection

Our study involved 27 interviews conducted across three case sites in the wine industry in New Zealand. The rationale for accessing three case sites is to be able to go in-depth with a small concentration of cases that could be analysed across case sites rather than reliance on a single case ([Dyer Jr and Wilkins, 1991](#)), or dilution of depth by considering too many case sites ([Eisenhardt, 1989](#)). Selected businesses needed to meet certain criteria ([Kuzel, 1992](#); [Miles and Huberman, 1994](#); [Patton, 1990](#)). First, each family business reflected the definition held by a number of authors that the business needed to be owned and managed by a family with potential for it to be passed to the next generation of the same family (e.g. [Chua, et al., 1999](#)). Second, the winegrowing businesses needed to be medium-sized according to NZ Winegrowers categories.⁹² Third, there needed to be at least two generations currently involved in the business and the family needed to hold majority shares. Finally, there was no restriction on the region within New Zealand. To establish the suitability of any one winegrowing family a spreadsheet was utilised to tabulate against these criteria. To support confidence that the selected businesses were owned by family, the Companies Office register was referred to, and current websites and advertising provided clues as to the appropriateness of each firm shortlisted. The three selected family businesses represent a diverse cross-section of family businesses given the selection criteria (elaborated on the findings). Interviews were carried out with all family members involved in the respective business, and a sample of employees which served as an objective account of the dynamics in the family. Each case site represented two generations which allows analysis of knowledge sharing from IG to NG and vice versa. Table 1 presents some of the demographics of the cases.

⁹² Category 1 – annual sales not exceeding 200,000 litres. Category 2 – annual sales between 200,000 and 4,000,000 litres. Category 3 – annual sales exceeding 4,000,000 litres.

Table 1: Case sites

Company	Years in business (approx.)	Ownership	Number of family members in the business	Generations since establishment
Merlot Family Vintners	100	IG and NG	Three	Three
Sauvignon Family Estates	40	IG	Five	Two
Riesling Family Winegrowers	25	IG	Five	Two

Data analysis

For a contribution to be transferable or generalizable the collection and analysis needed to be authentic ([Roulston, 2010](#)) and credible ([Golafshani, 2003](#)), which can be built through the transparency of research procedures and carrying out the research methodically, while adhering to the evidence ([Yin, 2011](#)). We utilised NVivo 9's tree-node hierarchy to manage and then further reduce and synthesize rich data to establish patterns and themes that lead to reliable interpretations ([Wiles, Crow, and Pain, 2011](#)). By using a replicable protocol for interview questions congruent with the positive organisational lens ([Ceja-Barba, 2014](#)), rigor was introduced when interviewing both family members and employees. These interviews were supported by observations and archival evidence and contribute to the validity and reliability of data. Moreover, our case findings are descriptive ([De Massis and Kotlar, 2014](#)) and reflect our aim to argue the importance of bidirectional knowledge sharing.

We adopted the SECI spiral model presented by Nonaka and Takeuchi ([1995](#)) to frame our analysis and subsequent discussion. The SECI model (socialization, externalization, combination, and internalization) introduced knowledge as both tacit, that is, knowledge embedded in individual experience involving intangible factors including belief, perspective, and values, and explicit knowledge such as that which can be articulated through all language including specifications and manuals.

Findings

Our descriptive case findings concentrate on elaborating on the externalization and internalization modes of the SECI model. The examples provided for these two modes demonstrate how valuable the next generation (NG) knowledge base can be for generating innovative outcomes and change. However, examples of the socialization and combination modes are expressed when discussing the different knowledge bases.

Foundations of knowledge

As expected there are similarities and differences between the case sites and given the idiosyncrasies of each family business, unrelated examples emerged where knowledge sharing, and more specifically bidirectional knowledge sharing, occurred. The primary similarities between the businesses were that the family controlled their respective businesses; the senior management included members of the family; each had a long-term orientation and sought continuity through the bloodline; and each had considerable influence

over their businesses through ownership and management. Demonstrating bidirectional knowledge sharing, we found examples of the incumbent generation passing on practical knowledge and conversely the next generation sharing knowledge from their experiences and education. The knowledge held in each business was quite different with Merlot Family Vintners being much older and with extensive experience in establishing their vineyards in various regions. Both Sauvignon Family Estates and Riesling Family Winegrowers in their relative youth had indicated their involvement in pioneering new regions albeit the Rieslings had established their knowledge base off the back of corporate winegrowing where the Sauvignon family had entered the market by planting in an unestablished region based on pragmatism rather than science.

Different knowledge bases

The incumbent generation (IG) for each firm described how they acquired their knowledge through “trial and error,” where they learnt through doing things themselves. Solomon Sauvignon exuded this practical knowledge. Adopting a “learning by doing” style, Solomon chose almost twenty varieties of rootstock, with most originating from Europe. After succeeding with the first vintage he and his wife Sylvia grafted their own vines as the focus of the wine industry shifted from New Zealand’s North Island to the South Island.

We grafted everything and then I found the root stocks that didn’t show much phylloxera and didn’t show much leafal virus – with no scientific evidence, just by the eye... we really propagated them and expanded all our vineyards.... (Solomon Sauvignon)

In the new region close to where he was growing, a pragmatic Solomon spotted an opportunity to provide the massively growing industry just south of his region with disease-free vines which created significant cash flow and employment in his region. Notably Solomon did not rely on a scientific approach but rather a practical approach where he saw a need and used common sense.

Everybody lined up and wanted cuttings from us.... We propagated them on clean deep cuttings and we preferred our own potting mix. So in the late Seventies, early Eighties we sold individual buds from Riesling, Silvaner, Gurbert, Chardonnay for 10 cents a bud. I remember we employed every woman [in the area] we could find. What we pruned out there – any cutting was picked up and taken into the shade and cut up into individual buds and sold to Montana or to Corbans or to Penfolds and so on. (Solomon Sauvignon)

Although the IG in the two newer firms (Sauvignon and Riesling) had some education, they often relied on gut feeling and bypassed science and technology. The learnings of the next generation (NG) were more forward-thinking, mainly due to technological and scientific advances in recent decades, and they were encouraged to seek internships in other wineries, domestically and internationally. A difference between the three family businesses was the time the next generation entered the business. While the IGs entered the business formally at a very early age, the next generation typically obtained formal education and sometimes established themselves in completely different industries. Most of the next generation members interviewed came back to the family business before they were 30 and were usually employed in a position of responsibility but not necessarily leadership. Growing up, there were similar examples of grooming and mentoring. All members of the next generation interviewed recalled growing up among the vines and in the winery where they were given projects under the guidance of their parents. From a very early age the next generation were

doing chores around the vineyard, being involved at harvest time, and later being entrusted on the bottling line and packing.

I didn't have jobs after school specifically. It never required my level of input. We had people, staff all through my life. When Dad was young he would have jobs after school because there was just no one else. But in the school holidays I would either work in the bottling line or do some tractor work from when I was twelve until we got some staff... [After school] I went to Australia and did a degree in winemaking. I never considered anything else... I came back here for two years and then thought, actually if I don't enjoy winemaking I've got no other career opportunities so I went to Auckland University and did a Commerce degree. And then came back here for about six or nine months but I was looking to work outside the business to get some further experience. It's no good coming into the business if you don't bring anything. So I went to work for a [pharmaceutical company] for about seven years in the sales and marketing area. (Morgan Merlot)

This scenario of working in the business then leaving to work elsewhere was the norm for the NG across the three case sites. Notably, there were examples where the chosen profession of the next generation was incongruous with the winegrowing profession. For example Suzie Sauvignon studied in a medical field and treated winemaking as a “Plan B”. After studying for five years and completing a Masters while practicing medicine, Suzie decided to enrol in winemaking. This was followed by several years completing vintages in North America and Europe before returning to the family business. Suzie recalled how she was able to align her vocational background with winemaking.

In your studies you obviously study a whole lot of biology papers. Human biology, calculus, a couple of chemistry papers. [Then I did] a bit more bio-chemistry, stuff that's got more to do with saliva and taste and physiology. It was great. Like I can remember very well in my exams asking about sensory, like perception and tasting wine and stuff, and I could retain that quite well... In addition you knew kind of the nerve fibres and muscles and all the ins and outs of the equipment. (Suzie Sauvignon)

When pressed further she expressed how this knowledge could be applied.

It is quite important when you're tasting wines every day, how you taste things and what you taste and why you taste it. And, if a wine is high in alcohol it can be perceived as sweetness... the other day when I was in tasting people were saying about our Chardonnay, 'it's sweet'. And I knew, no, it's not sweet, it's low in acid, which might be perceived as being sweet but it's also high in alcohol which also can make it be perceived as sweet. But it's also got a lot of texture and body from all the work we do with lees. So your perception of things changes depending on the acid and the sugar balance and the phenolics, you know, all that kind of stuff. (Suzie Sauvignon)

Like Morgan Merlot, Suzie gained significant experience in an unrelated profession and was able to transfer her explicit knowledge to the family business. With her physiology knowledge Suzie could formalize her interpretation of taste. This would be an example of combined knowledge (explicit to explicit) where her explicit knowledge (formal education in

medicine) is translated, adapted, and documented as, for example, tasting notes for various wines. These examples of the IG and the NG demonstrate the potential the NG can bring to a family business through their formal education and experience, while also highlighting the importance of the IG's common sense. With a better understanding of the knowledge bases for each generation we will present our findings based on externalization (tacit to explicit) and then internalization (explicit to tacit) (refer to Figure 2).

Externalization

Knowledge sharing was evident between the generations and was displayed differently for each case site. Notably similar was each needed to recognise the knowledge gap between generations and their diverse knowledge bases. Moreover, these diverse knowledge bases presented an enviable environment for knowledge sharing when contrasted with nonfamily firms. Each family business had a rich learning environment where the next generation could learn from the incumbent generation. However even the incumbent of Merlot Family Vintners reminisced about making a change where once they used spades for planting vines where now they use a tree planter, however the main difference was that he waited until he took over from his father before implementing change while the current generation may change while transitioning toward a succession. He added:

When I took over from my father and I started bringing in new techniques, like I started bringing in yeast cultures, cold fermentations, stainless steel, things like that, we were getting these quantum leaps in quality. (Murray Merlot)

Murray, an incumbent on Merlot Family Vintners, was speaking of a time in the mid-1900s where there was a proliferation of equipment introduced to the industry. Science was more advanced although it was still common for wine to have added sugar. This introduction of explicit knowledge would have been revolutionary at the time. However these processes, equipment, and science have significantly advanced since then. An example of new knowledge introduced by the next generation was when Murray's nephew entered the business. Murray acknowledged that their business was run quite loosely until Morgan introduced sophisticated systems that moved the business toward being more computer based.

So Morgan comes in with a huge experience in the disciplines of big business and he's able to actually install them into our business, which we probably lacked a bit.... Our company was run hugely by Melvin and myself and stuff in our heads, and run by the seat of your pants, whereas [Morgan is into the] costings. (Murray Merlot)

Morgan Merlot had a well-established career when he entered the business in his thirties and came in with a level of authority and maturity. Upon his arrival Morgan created himself a role that played to his skills by simply concentrating on financial and systems aspects of business.

When I came into the business I spent the first bit of time not really taking anybody's job off them but working away to understand how I felt the business worked and then where I saw fairly flimsy systems, I created new systems.... I didn't take any job off my father or uncle. So I created this area of work that I was working on – the financial area and systems area – which is going to make it that more robust.... My level of understanding of how the business actually ticks became better than my father's and uncle's, because I drilled down. (Morgan Merlot)

From Morgan's commercial background he not only introduced rigor to the business, he created a way for risk to be minimised through a better understanding of the cost of production, even down to the cost of each bottle. This is an example where tacit knowledge was made explicit through the NG building a new level of professionalism. This allowed them to understand risks through the systems implemented and detailed cost of production, quickly allowing opportunities to be screened with more confidence, or as Morgan put it "understand where your risks reside and where opportunities are". Examples of opportunities exploited included a few innovative partnerships like ownership of production facilities alongside other winemakers; distribution rights to supermarkets and other chain stores; even partnering with non-family members for the purchase of other wineries. Morgan further pointed out that "systems run businesses and people run systems," which highlighted the need for some control in the business from which good decisions can be made. Another example of formalizing systems was with contracts. While the incumbent generation agreed deals upon handshakes, Morgan followed suit, albeit more formally, while still not making the contracts onerous. This incremental change of systems was based on prior knowledge where, in this case Morgan, retained some openness with agreements because it encouraged goodwill between parties as it had done for his father and uncle. The compromise made between informality and formality for contracts was a conversion of tacit knowledge from the family and explicit knowledge derived from external experience.

Morgan also engaged a consulting firm to make explicit the culture of the business. He identified that the family had a way of doing things however this was not always translated for the employees to understand. He recounted some of the family's history that expresses why they do things the way they do.

Well, generationally, the culture of this company has been set up by my grandfather and his personality - he was fairly steady as you go. At 14 he was prepared to go from Croatia - he actually grew up without parents, in effect, from 14 onwards... [However he] turned out really well and moralistically, very strong moral radar... And people acknowledge and respect that. So that's been quite a strong cultural thing for our company... The cultural things were set up by him and instilled in my father and uncle and consequently in me. And it doesn't just permeate the business, it's the family. All the family hold these principles. (Morgan Merlot)

From this foundation of how to run the family business there needed to be some translation for non-family members employed in the business.

So the family and the business sort of overlap, intermix in cultural things. That flows into the business of non-family. This is how we do things. This is what we hold dear... We have embarked upon, a process of formalizing a Mission Statement so that people can understand more easily what it is we've got as a more formal exercise, and why we do this. To me it's 'we don't have a mission statement, and so do we need one? Do we need a value statement?' The reason I would say not really is because I know what those values are and culturally we have those in our company. The reason why I say yes is because we now have employees in [other regions] who don't agree with us and don't interact with us and we have a growing base of people that need to understand these are our cultural cues, and these are

our values, you need to operate like this, and you can't say you haven't been told, here it is in black and white. (Morgan Merlot)

Importantly, this conversion of knowledge is bidirectional because the next generation takes the tacit knowledge that was traditionally passed through the family and through the application of new systems makes this knowledge explicit to the wider organisation.

Internalization

The IG of the Riesling family were known as being very experienced with Roger Riesling being involved in some of the first plantings in the region. Roger adopted a corporate business model for the family business, however he was not confined by systems and was very open to ideas and opportunities presented by the next generation. Renée, his youngest daughter, took advantage of this openness. After starting a Bachelor of Commerce and realising this was not for her, Renée asked her parents if she could work in the vineyards where she realised this was something she could do for a living. She went on to study viticulture and winemaking followed by vintages in Australia, North America, and in wine sales in the United Kingdom. Upon returning to New Zealand she worked for another family business in New Zealand. Apart from learning different styles she learnt other practices like organic growing.

And it was good to see what other people were doing. It's not like you're spying or anything like that. And they've all got different styles. It's just like baking a cake. My Mum can bake better than me - it's just like that. We have got quite a few friends who are also winemakers in family companies and they've done the same, gone away and got experience and then brought it back... So I came back [to our family business] and went straight into a viticulture role. (Renée Riesling)

With all her external experience, Renée came back to a role where she continued to be mentored by her uncle who had previously trained under her father.

It was like Dad teaching me everything as well. I know I had all the scientific stuff [on paper] but it was a matter of being practical and being able to do it... Because we're a family company, we talk about generational steps, this was like, well, folks, if you want to see the next generation you need to start preparing for it. So I convinced Dad to give me four hectares to turn into organics. And then that went quite well and we made some really good wine out of it. [It was an advantage that] I'm able to make the wine as well... (Renée Riesling)

Both Roger and Renée were trained as viticulturists and had a shared understanding of the implications for organic growing given the stringent guidelines that define “organic”. However this did not deter Roger from providing Renée with four hectares for a research and development project investigating organic winegrowing. Renée reflected on how she created the organic vineyard which produced award-winning wines.

It was just my project, just my job to look after it. And then because it did quite well, I think Bob Campbell rated it like 92 out of a 100 for its type... And then [my father] let me loose, so now I've got 14 hectares of it. (Renée Riesling)

To put this in perspective, Renée was entrusted with about 10% of the land that the family owned and leased. This example is twofold, firstly it recognises the socialization (tacit to

tacit) aspect of a family firm, with the NG and the IG having similar tacit knowledge with the addition of the uncle mentoring the niece having benefited from his brother’s knowledge. Additionally, there is a strong example of the IG being cognisant of the NG’s explicit knowledge and giving her leeway to apply this knowledge. This led to innovative practices that created a new product for the winery. These illustrative examples across the case sites reflect the importance of bidirectional knowledge sharing utilising knowledge from the NG and not forgoing the knowledge of the IG and being given leeway by the IG to implement the knowledge.

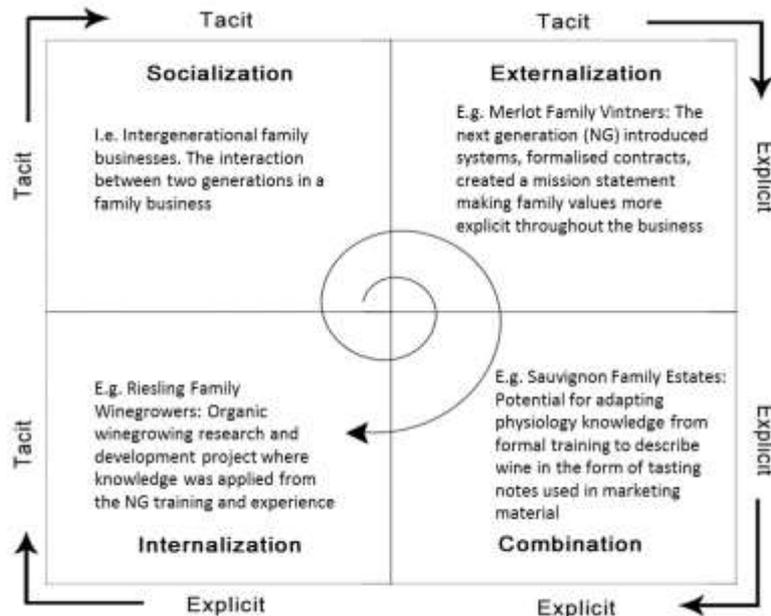


Figure 2: Adaptation of SECI model of knowledge dimensions (Nonaka and Takeuchi, 1995)

Discussion

Family firms in contrast to non-family firms present an enviable environment for sharing knowledge. With nonfamily firms relying on the experience of individuals that do not necessarily have a common purpose, family firms are able to capitalise on, not only currently accessible knowledge, but tacit knowledge built up over a period of time and sometimes over generations (Sharma, 2004). Treviño-Rodríguez and Tàpies (2006) suggested that the incumbent generation needed to transmit their knowledge to the next generation (NG) at an early stage in order to achieve an effective transfer of knowledge. In doing so, they added that the next generation could benefit from situations being created where they could “act, reflect, and name the findings” (p. 348). In that way, effective learning could occur where “commitment, expectations, values, and perceptions” needed to be “shared” across generations with learning processes being constructed in the way “that they show challenging and solvable situations highly related to real life and to future work” (p. 353).

However we depart from this traditional view by acknowledging the valuable knowledge base that is held by the NG through their formal education and experiences. From our findings we see how the next generation, if given some leeway, can strongly influence the knowledge base of the family business. The NG can be an important source of explicit knowledge that can be converted to tacit knowledge (internalized) within the family firm. Given the nature of family businesses, at least in traditional industries and in particular the wine industry, they also hold tacit knowledge gained from their involvement in the family

business from an early age. Nonaka and Takeuchi (1995) identified knowledge conversion through four modes. The first mode was socialization (tacit to tacit) which plainly is the sharing of knowledge through experiences, for example an apprentice learning from their master. This is prevalent in family firms where family members take a journey of lifelong learning before entering the family business. However the main criticism of socialization is that knowledge does not become explicit, that is documented in the way that is easily leveraged within the organisation. From our findings, the NG of the Merlot family initiated the process in which tacit knowledge would become explicit through a mission statement and supporting documentation that could be disseminated through their business. This action recognised the socialization within the family firm, which to some extent is important to retain a competitive advantage. However the knowledge needed to become explicit to avoid derision within the business with those that were not close to the family and who misinterpreted the values held by the family. This is a form of externalization (tacit to explicit) which was also obvious through the implementation of systems by Morgan Merlot (NG). The mode of internalization (explicit to tacit) where someone receives knowledge and subsequently applies that knowledge, was summarised by Nonaka and Konno (1998):

[Internalization] requires the individual to identify the knowledge relevant for one's self within the organizational knowledge. That again requires finding one's self in a larger entity. Learning-by-doing, training, and exercises allow the individual to access the knowledge realm of the group and the entire organization. (p. 58)

This is particularly true through Renée Rieslings' reflection on how she applied explicit knowledge acquired from a formal education and industry experience within the family business. Apart from introducing an innovative process to the firm this also cemented her place in the "larger entity". Her new knowledge generated innovative outcomes for the firm which were shared and utilised within the firm to the extent her father increased her influence through providing significantly more land for her to produce organically. Furthermore, Renée was the recipient of mentoring not only from her father but her uncle conveying the importance of quality relationships between the generations for accepting new knowledge. Cabrera-Suárez (2005) suggested the role of the IG was to mentor the NG and based on her case studies, Cabrera-Suárez observed that with completely successful cases of family firm leadership, the role of the IG was an:

...important supporting role by allowing the assumption of responsibility and by creating an atmosphere of consulting and tolerance of mistakes.... Differences in leadership styles are considered constructive and fruitful. The conflict is limited to the working environment. (p. 91)

Mindful of these sentiments, we propose that family businesses need to be cognisant of the need to share knowledge in both directions between generations and in doing so understanding what competitive advantages each bring to the business. From our findings we reveal that the NG's knowledge can be important for recognising opportunities however a respectful acknowledgement of the IG's tacit knowledge can ground the introduction of explicit knowledge. Moreover, each generation has a choice of whether to restrict the knowledge they share or use their knowledge proactively. Husted and Michailova (2002) argued that:

Failures arising from the launch and implementation of knowledge sharing initiatives in both larger and smaller organizations are due to the less

recognized fact that firms and individuals in firms are inherently hostile to knowledge sharing. (p. 61)

An important difference between the knowledge sharing scenarios, that is obverse and reverse knowledge sharing, is that the IG could do what they choose given the power relationship between the generations ([Barnes and Hershon, 1994](#)). For example, the IG may still implement an innovative idea even if rejected by the NG. Conversely, if the IG rejects an idea from the NG it may never be implemented. Family businesses share similar experiences to nonfamily businesses in terms of hostility toward knowledge sharing. The critical time where diverse knowledge needs to be recognised is during the transition period of succession where there can be incongruence between the generations which could “make or break” the family business.

Conclusions

Knowledge sharing can benefit both generations however it needs to be managed well to avoid detrimental consequences. Being aware that knowledge sharing is bidirectional, that is obverse knowledge sharing (IG to NG) and reverse knowledge sharing (NG to IG), can contribute to diverse knowledge representing both generations. Referring to the SECI model ([Nonaka and Takeuchi, 1995](#)), there are significant opportunities for families to convert knowledge by: a) retaining their tacit knowledge through socialization via shared experiences. In this case the NG would be like an apprentice, the advantage being the potential for the apprenticeship to start at a very early age; b) gaining new knowledge through externalization where the NG could create knowledge through their formal education and experiences and articulate this knowledge through new systems or products; c) combining explicit knowledge gained by the NG which has been obtained both internally and externally and converted into new knowledge that can be shared within the organisation; d) the NG receiving explicit knowledge that can be applied within the family business that can be converted to tacit knowledge.

Where the IG established their knowledge through trial and error experiences their accrued wisdom was displayed through intuition and foresight. In contrast we found the NG brought explicit knowledge into the firm gained through formal education, working for similar firms, and sometimes in professions unrelated to winegrowing. These experiences were often brought with an intimate understanding of the international market and practices from other countries. Alongside the benefits of knowledge sharing between generations there can be detrimental consequences if the knowledge is not managed well. We propose that families need an overt awareness of both obverse and reverse knowledge sharing and the need to manage diverse knowledge represented by both generations. Contributing to the solution for managing diverse knowledge, families could engage with governing knowledge sharing ([Foss, 2007](#); [Foss, Husted, and Michailova, 2010](#)), that is the need to choose “organizational structures and mechanisms that can influence the processes of using, sharing, integrating, and creating knowledge in preferred directions and towards preferred levels” ([Foss, et al., 2010, p. 456](#)). Knowledge governance needs to be recognised early particularly when the next generation (NG) enters the business. An early engagement with the NG can build on the already tacit knowledge they have from observing the incumbent generation (IG) to promote intuitiveness, creative foresight, and pragmatic decision making.

Advantages that family firms have over corporate firms to facilitate knowledge sharing include connectedness and cohesion ([Björnberg and Nicholson, 2007](#)), trust and close ties ([Sundaramurthy, 2008](#)), and the ability to build tacit knowledge between generations ([Jaskiewicz, Uhlenbruck, Balkin, and Reay, 2013](#)). By having strategies in place to minimize

hoarding or rejection of knowledge, along with redundancy in the knowledge production and problem-solving processes can be avoided. Moreover, by being cognisant of sharing knowledge in a positive way, families can benefit from a learning environment that encourages bidirectional knowledge-sharing. This article introduced bidirectional knowledge-sharing as a *modus operandi* for family businesses to generate outcomes and change. At present there is a paucity of studies on knowledge-sharing in family firms and it is hoped this study encourages more empirical research in this potentially rich area of scholarship.

There are future opportunities to engage with social psychology literature including social modelling techniques that could compliment knowledge sharing in family businesses ([Bandura and Walters, 1963](#); [Wood and Bandura, 1989](#)). These techniques could encourage families to be more cognisant of the need to realise the potential in bidirectional knowledge sharing and how to manage diverse knowledge between generations. This would be particularly relevant with the early habituation of the next generation (NG) into the operations of the business and building tacit knowledge. Family businesses can be rich learning environments. The development of a mentoring or grooming curriculum for learning that encourages knowledge sharing at various life stages, could enrich the sharing of knowledge and provide a platform for the NG's to share their education and experience.

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Entrepreneurs in the Making: Cases from the Cashmere Industry in New China

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Entrepreneurs In The Making: Cases From The Cashmere Industry In New China

Abstract

This study was developed around the central issue of the “legitimacy of private business development”. The key question being asked is “how an entrepreneur emerges in our contemporary society”. Drawn upon Bourdieu’s sociological work ([Bourdieu, 1977](#), [Bourdieu, 1989](#), [Bourdieu, 1998](#)), this article attempts to interpret the emergence of the “entrepreneur” historically and analytically in the realm of social processes. The empirical analysis includes six theoretically sampled cases from the cashmere industry in Northern China. Investigating the cases, we found that how an “entrepreneur” came into being is, first of all, at the individual level, a continuous process of trying to “fit-in”, and a match between their amount of responsibilities and positions in the fields. Secondly, at the field level, it is a process of trying to “stand-out”, and a form of social movement to achieve mass flourishing. This article sheds light on the genesis of entrepreneurship, which extant studies frequently neglected. In demonstrating how entrepreneurs emerge from situated practices relating to their positions in the structure of power relations, the article also facilitates analysis of the role of entrepreneurs in a changing society.

Introduction

Following Cantillon’s first use of the term “entrepreneur” in 1775 ([Veciana, 1999](#)) through to Schumpeter’s identification of “entrepreneur” as an entity worthy of study ([Schumpeter and Opie, 1934](#)), to the latest surge in scholarly research on entrepreneurship ([Low and MacMillan, 1988](#), [Stevenson and Jarillo, 1990](#), [Shane and Venkataraman, 2000](#), [Saravathy and Venkataraman, 2011](#)), extant studies have explored the distinctiveness of being an “entrepreneur”. These studies have attended to entrepreneurs’ personal traits, family backgrounds, cognitions, emotions, and to how they “carry out new combinations” ([Schumpeter and Opie, 1934](#)), “create new enterprise” ([Gartner and Shane, 1995](#)), and “discover opportunities” ([Stevenson et al., 1989](#), [Venkataraman, 1997](#)). Beyond this, we gain little insight into how an “entrepreneur”, as a developing entity, as well as a collective identity, emerges over time within the fabric of our contemporary society. The genesis of entrepreneurship is frequently neglected. In this article, we question the latent dominant assumption that an “entrepreneur” is a given entity, and an actor entering the field of business is deemed as an entrepreneur automatically. Instead, we attempt to draw upon Bourdieu’s sociological work ([Bourdieu, 1977](#), [Bourdieu, 1989](#), [Bourdieu, 1998](#)), and interpret the emergence of the entrepreneur historically and analytically in the realm of social processes.

Specifically, this article was conceived around the central issue of the “legitimacy of private business development”. The key question being asked is “how an entrepreneur emerges in our contemporary society”. By using Clarke’s ([Clarke, 2003](#), [Clarke, 2005](#), [Clarke and Friese, 2007](#)) grounded theory mapping approach, we examined the stories of personal and business development around six cases from the cashmere industries in Northern China. The cases were theoretically sampled according to the former career backgrounds of focal “entrepreneurs” in each case when they first engaged in private businesses in China. Investigating the cases, we found that how an entrepreneur came into being was, first of all, at the individual level, a continuous process of trying to “fit-in”, and a match between their amount of responsibilities and positions in the fields; and secondly, at the field level, a process of trying to “stand-out”, a form of social movement to achieve mass flourishing. This article sheds light on the genesis of entrepreneurship. In demonstrating how entrepreneurs emerge from situated practices relating to their positions in structures of power relations, the article also facilitates analysis of the role of entrepreneurs in a changing society. In addition,

alongside a generalized view of entrepreneurship, this study also attends to the unique expression of entrepreneurship while taking into account specific industry and place features.

Theoretical Constructs

In this study, we do not attempt to use a particular theory, or attack others, to explain observations from our qualitative study. Instead, we aim to employ a broader theoretical framework to understand the temporality of entrepreneurs' emergence historically and analytically in the realm of social processes. Combining selected elements from both individual learning theory ([Cope, 2003](#)) and neo-institutional theory ([Rao et al., 2003](#)), Bourdieu's sociological work ([Bourdieu, 1977](#), [Bourdieu, 1989](#), [Bourdieu, 1998](#)) brings forward a multi-level, practice-driven framework. In particular, Bourdieu further situates the practices to actors' positions within the social structure, which extant research has neglected. Four constructs from Bourdieu's sociological work are essential to understanding the emergence of entrepreneur and provide us with a framework and language to envision the emergence as a socially and historically embedded process: (1) a practice-drive framework, (2) modes of practical logic, (3) structure of power relations, and (4) capital as sources of power.

A practice-driven framework

With his philosophical stance of "eclecticism" ([Webb et al., 2002](#)), Bourdieu emphasizes the position of practices that sit between the relationship between agent and social structure. In particular, at an individual level, Bourdieu construes persons as "neither deterministically manipulated by their social structures, nor free and autonomous agents", but rather as actors who "artfully interpret and seek to navigate" that context actively ([Bourdieu, 1989](#)). At a field level, he believes objective structures are capable of guiding and constraining practices, but are also subject to changes by practices ([Bourdieu, 1989](#)). The focus on practice steers our attention away from the enduring agent-structure debate ([Wendt, 1987](#), [Checkel, 1999](#), [Battilana, 2006](#)), and gives an action-oriented sense of everyday life ([Watson, 2013](#)). The notion of practice-driven also suggests that there exists a parallel developing process driven by practices at both individual level and the field level. In particular, in our study we narrowed the broad "social structure" and referred specifically to the "field of business".

Modes of practical logic

Examining in detail the content and logic of practices, Bourdieu further brings forwards two epistemological tenets. The first tenet refers to "the habitus", which is the partly unconscious practical "taking in" of rules, values and "dispositions" ([Webb et al., 2002](#)). The second constitutes an extension of the practical sense, and is called "reflectivity", which "disposes its agents towards, the consciously 'systematic exploration of the un-thought categories of thought'" ([Webb et al., 2002](#)). A similar point is made by situated learning theory, which also constructs a hierarchy of learning levels, with instrumental "lower-level learning" and also more fundamental "higher-level learning" ([Fiol and Lyles, 1985](#), [Cope, 2003](#), [Politis, 2005](#)). The distinction of two modes of practical logic draws our attention to the different situations or dispositions entrepreneurs are exposed to, which act as stimulants of the different levels of learning ([Cope, 2003](#)).

Structure of power relations

Bourdieu further situates the practices to actors' positions within the social structure. Here, Bourdieu defines structures, which are also called fields, as "relational, dynamic social

microcosms” (Bourdieu, 1989). Fields are occupied “by dominant and dominated actors, who attempt to usurp, exclude, and establish monopolies over the mechanisms of the field’s reproduction and the type of power effective in it” (Bourdieu and Wacquant, 1992). Therefore, the process of field development is essentially political and embodied with power in movement (Tarrow and Tollefson, 1994). At this point, we see Bourdieu’s idea of fields is fairly consistent with neo-institutional conceptualizations of fields, in that competing logics and interests fight for domination (Chia and Holt, 2006). Correlate dispositions with positions in structure, agents would presumably act differently according to the positions they occupy in the structure of power relations (Regnér, 2003).

Capital as sources of power

What are the sources of power? Bourdieu further points out the amount of power a person has within the field depends on the capital he possesses (Webb et al., 2002). In particular, the species of capital includes economic capital, cultural capital, social capital, and symbolic capital (Bourdieu 1986). Agents are distributed in the overall social space, “in the first dimension, according to the overall volume of capital they possess and, in the second dimension, according to the structure of their capital” (Bourdieu, 1989). The parallel developing processes driven by practices at both individual level and field level is ultimately about actors’ struggle to amass and convert resources (Rao et al., 2000). To maintain consistency with our forthcoming discussion, in this study, we also refer to capital generally as “resources”.

These four constructs provide a theoretical departure point for our study. It enables us to begin with a rudimentary conceptual framework (Miles and Huberman, 1994) for further developing theory about the emergence of the entrepreneur. In particular, Bourdieu situates the practices to actors’ positions in social structure, which extant research has neglected. In the next section, we give an overview of the backgrounds of this study on the development of entrepreneurship and the cashmere industry in New China.

Entrepreneurship and the cashmere industry in New China

Since the late 1970s, there has been a continual redefinition of entrepreneurship in practice in New China. In the study, we refer the China after the year 1949 as New China. The central issue underlying the changing process, which is being constantly debated, is the “legitimacy of the private business development”. During the past three decades, China has experienced the transition from a centrally-planned and closed economy to a market-oriented and open economy. Out of this tremendous transition, a booming entrepreneur class emerged and expanded, together with the growth of private business in China. Therefore, to understand the unique expression of entrepreneurship in China, we need to place entrepreneurship historically within the context of the birth and development of the private sector in New China (He, 2009).

As we see, there is no clear or fixed definition of entrepreneurs and what their form of businesses looks like (He, 2009). Over the years, the discourses and meanings attached to an individual engaged in private business have changed, as have the forms of business entity. Prior to 1978, the engagement of individuals in trade was prohibited in China associated with distasteful terms like “capitalist” or “speculator (tou ji dao ba)” (Young, 1991). Since the 1980s, the state began to loosen its grip on the economy and allowed local people to set up individual and collective enterprises to sell daily necessities, repair goods, and do other small businesses in limited industries. Enterprises that employed fewer than eight people began to emerge to fill market niches. They were commonly labelled “individual household businesses

(ge ti hu)” ([Young, 1991](#)). In 1988, a new, attractive category, “private enterprise” was created for businesses with more than seven employees. Not until 1992 did the term “Limited Liability Company” appeared in regulation, and in 1993, the landmark “Company Law” passed. The term “entrepreneur” as a title of identity has only began to flourish in recent years.

This unique period of transition in China, along with the emergence of a new entrepreneur class, provides a natural laboratory for studying the genesis of entrepreneurship ([Kiss et al., 2012](#)). From this period in China, the textile and garment industry was one of the earliest industries to undergo privatization, as well as enter the international market. The cashmere industry is only a small section of the worldwide textile and garment industry. Currently, China is the biggest cashmere producer in the world, with raw cashmere resources taking up to 70% of world share ([CWTA, 2008](#)). Since the 1990s, the cashmere industry has developed rapidly in China, and some people have established internationally renowned enterprises. Because of the long history of the Chinese cashmere industry, entrepreneurship developed with more intensity within the industry compared with the emerging industries. Therefore, we expect the cashmere industry would be an ideal candidate for studying the genesis of entrepreneurship in New China.

Of particular interest, here is a story of a modern “hero and the golden fleece” which we will examine. In Greek mythology, there is a story of “Jason and the Golden Fleece” ([Baumann, 2013](#)). In the story, Jason and his band voyage by sea into a strange land searching for the Fleece of the Golden Ram, in order to reclaim his father’s kingdom. The heroic image of Jason is quite parallel to our impression of a typical entrepreneur in the contemporary business world, who is an ambitious risk-taker. Back to our modern world, cashmere is often praised as “soft gold” inside the industry because it is a luxury item and is constantly sought after. Since the late 1980s, the price of cashmere has taken a roller-coaster ride with repeated outbreaks of “cashmere wars”. Therefore, the unique feature of the cashmere industry also makes it a very interesting topic to study.

Methods

Research design and data collection

This study developed from an inquiry into the sense making of entrepreneurial events, but what emerged was a story about entrepreneurs’ emergence in a transitioning economy. The key question being asked is “how an entrepreneur emerges in our contemporary society”. A qualitative, case study strategy was adopted, as it allows us to combine multiple data sources to capture the complexities of situations ([Yin, 2008](#)). In March we completed a field trip in the Northern China. After the first round of data collection using “convenience sampling” and “snowball sampling”, we eventually theoretically selected six cases from the cashmere industry in that region for this study ([Glaser and Strauss, 1970](#)). The cases were sampled according to the former career background of the focal “entrepreneur” in each case when they first engaged in private businesses. Three major types of former career backgrounds were stratified. Within each type, two cases were selected for triangulation ([Denzin and Lincoln, 2005](#)). We collected data from three sources: (1) 14 in-depth interviews with “entrepreneurs”, managers and others within the cashmere industry; (2) several informal talks with local people both within and outside the cashmere industry, and informal observations; and (3) second-hand materials from scholarly research, company publications, media accounts, local Archive Bureaus, Statistics Bureaus and libraries. The interviews were open-ended, and carried out in Chinese. Stories on personal and business development were solicited.

Data analysis

To analyse the data, this study draws upon Clarke's work on grounded theory mapping (Clarke, 2003, Clarke, 2005, Clarke and Friese, 2007). Building on traditional grounded theory developed by Glaser and Strauss (1967), Clarke's "situational maps and analyses" re-situate the theory to better address the differences and complexities of social life articulated through the postmodern turn (Clarke, 2003, Clarke, 2005). In practice, Clarke introduces three main analytical approaches, including (1) situational maps, (2) social arenas maps, and (3) positional maps. As Clarke puts it (2005:86):

Situational maps as strategies for articulating the elements in the situation and examining relations among them

Social arenas maps as cartographies of collective commitment, relations, and sites of action

Positional maps as simplification strategies for plotting positions articulated and not articulated in discourse

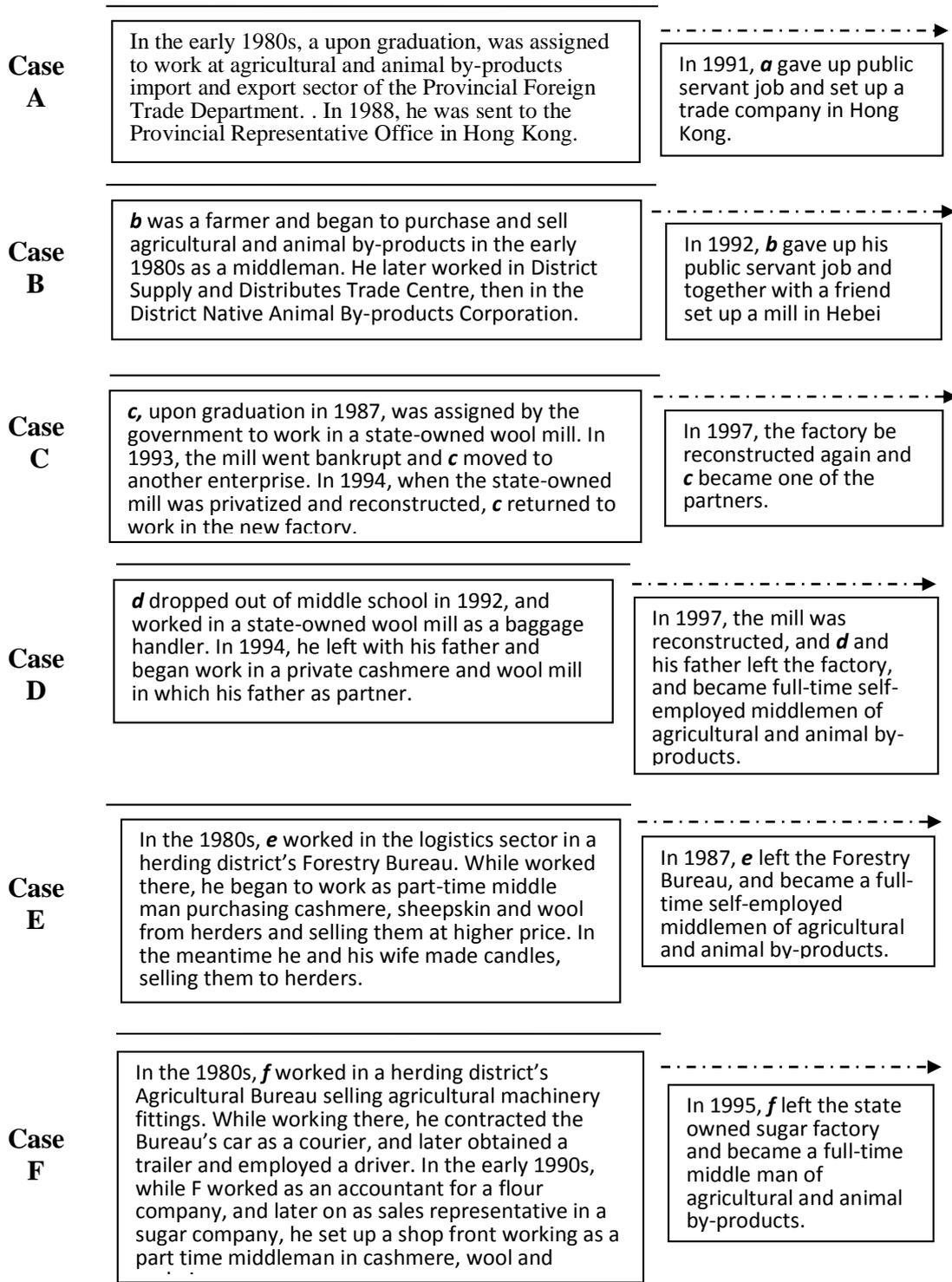
To make a situational map, one needs first to "descriptively lay out all the most important human and nonhuman elements in the situation of concern" and then conduct "relational analysis" (Clarke, 2005:87). To make a social arena map, "one needs to enter into the situation of interest and tries to make collective sense out of it" (Clarke, 2005:110). To make a positional map, one needs firstly to "*elucidate the key issue in the situation*", and then "portrays the positions" on the issue (Clarke, 2005:128). We consider the tremendous strength of Clarke's approaches is alignment with Bourdieu's ideas, in that both of them adopt a relational mode of thinking and relate practices to actor's positions within the social structure. In particular, Bourdieu's concept of "social structure" and "field" (Webb et al., 2002) parallels Clarke's (2005) "social world" and "arenas". So during the following analysis, we replace the term "arena maps" with "field maps" for consistent terminology throughout the paper.

Case analysis

The cases

In the study, we refer to the six cases as *A, B, C, D, E* and *F*. Correspondingly, we refer to the focal "entrepreneur" in each case as *a, b, c, d, e* and *f* respectively. Of the six "entrepreneurs", *a* and *b* had worked in the government Supply and Distributions sector prior to starting their own business. *c* and *d* initially worked in state-owned factories. *e* and *f* started their cashmere career as a part time middleman in the 1980s. For each case, we construct a timeline based on the "entrepreneurs'" stories of personal and organizational development, combined with other types of data. A partial overview of the cases is shown in **Figure 1**, which covers a brief account of the "entrepreneurs'" prior experiences and initial involvement with the cashmere industry, either as full-time self-employed businessmen or as partner of a private enterprise. As Figure 1 shows, in 1991, *a* resigned from the government position and established a trade company in Hong Kong. *b* in 1992 went to Hebei province, and together with a friend set up a small cashmere combing factory. *c*, after working in a privatised state-owned enterprise for 10 years, eventually became one of the partners of the firm in 1997. *d*, after first working in a state owned enterprise and later in a private enterprise, eventually became a full-time self-employed middleman. Both *e* and *f* worked from being a part-time middleman to a full-time middleman.

FIGURE 1 “let’s jump into the sea”: Six Cases in the cashmere industry



The story line

Moving back and forth along the timeline of each case, the data, and the theoretical constructs, we weaved together the stories, and observed patterns relating to the actions taken by the focal “entrepreneur” (Miles and Huberman, 1994). Thereby, we created a chronological storyline centring on the sequences of actions taken. The story ends with

individual sense making of entrepreneurship. In this article we recorded the story in three metaphor terms: (1) jump into the sea, (2) feel the tide, and (3) like a fish in the water.

Jump into the sea

In 1984, there was a popular folk saying “let’s jump into the sea” (Wu, 2007). Originally, the term mainly referred to an individual quitting their job in a public entity and starting an individual business with ambiguous legal status. We use the label “jump into the sea” to describe the “entrepreneurs” initial exposure to private business in the cashmere industry. Here, we broadened the scope of the popular folk saying to extend it to include all persons who have never engaged in private business before becoming a full-time self-employed businessman. From the data, we discerned three kinds of “jump” among the six “entrepreneurs”, which are: (1) from working in a cashmere related government institution to setting up a private business of their own; (2) from working in a cashmere related state-owned factory to becoming a self-employed private businessman; and (3) from working in other backgrounds not directly related to cashmere industry to becoming a full-time self-employed middleman in the cashmere industry. More generally, the three kinds of “jumps” indicate the transition of China from a centrally-planned economy to a market oriented economy. As historical data shows, in the centrally-planned economy, the government dominated the economy, state-owned enterprises were merely an extension of government functions, and the engagement of individuals in private trade was prohibited. Therefore, the main career choices were either working in a government department or in a state-owned enterprise, or otherwise farming in rural areas, and jobs were assigned by government without much individual choice.

Feel the tide

As the interviews reveal, when the six “entrepreneurs” began to do business, they had no prior experience to draw upon on how to manage a private business in a market economy. We labelled their learning-by-doing experience (as opposed to a typical career in a centrally planned economy) as “feel the tide”. As they “jump into the sea”, they had no intended goal and needed constantly to make adjustments to develop “a feel for the game” (Bourdieu, 1990). Here we highlight two aspects of adjustments that can most obviously be observed in practice, including (1) constant adjustment of the enterprise’s position in the market, and (2) of self-position within the enterprise. From the data, we found the former further involves extension of the supply chain and manufacturing line within the cashmere industry, and diversification into different industries. Adjustment of self-position within the enterprise ranges from employing a professional mechanic to fix machinery, to taking on a fulltime manager, to retiring and delegating others running the enterprise. For example, the focal “entrepreneur” *d* (Figure 1, case D) recalled a scenario when he felt the immediate need to employ an external professional mechanic to repair machinery as the enterprise grew bigger:

After the new factory was established, one day, one piece of equipment broke down, and I went over to help fix the machine by myself. After fixing the machine at the front line for about three days, I began to realize that something was wrong. I thought to myself ‘I am not here to fix machines. This was not my true value. If I continue to fix machines, the enterprise will go bankrupt immediately. There are many other important things to be done. I have a big project to oversee, and I should not just focus on the tiny matters such as fixing machines’. So I halted production, and gave all the workshop workers three days off. I did not fix the machine anymore either. And I began to find professional mechanics from outside to fix the machine...[Translated from Mandarin by the author]

Like a fish in the water?

As the metaphor goes, the entrepreneurs simply “jump into the sea”, and “feel the tide”, but were they eventually “like a fish in the water”? At the end of the interviews, we further explored the focal participants’ individual conception of the notions of entrepreneurs and their self-identities. The question asked was “boiling down your experience in the cashmere industry, what do you think makes an entrepreneur, and do you think you are one?”. The answer was “no”. We found that the focal participants were vague about their identities. Several of them instinctively associate the title of “entrepreneur” with concepts of “responsibility” and “commitment”. According to their insights, an “entrepreneur” is someone who controls a bigger enterprise and who takes greater responsibility, and they themselves remain on the path to controlling that “bigger enterprise”. As a junior “entrepreneur” in case **F** (*Figure 1*), who carried on his father’s (*f*) business, described:

I feel like I am not an entrepreneur yet, but slowly I feel more like one. When I did business alone before, I got little pressure; I could chose to do something else when things went wrong. But once I established an enterprise, and began to employ more and more people, I could not quit halfway. It is irresponsible, as so many people rely on me for jobs. I feel that the person who does better in a bigger enterprise can make more of a contribution to society and their social responsibilities are greater. The bigger business I am managing, the bigger responsibility I feel I have.
[Translated from Mandarin by the author]

The logic of practice

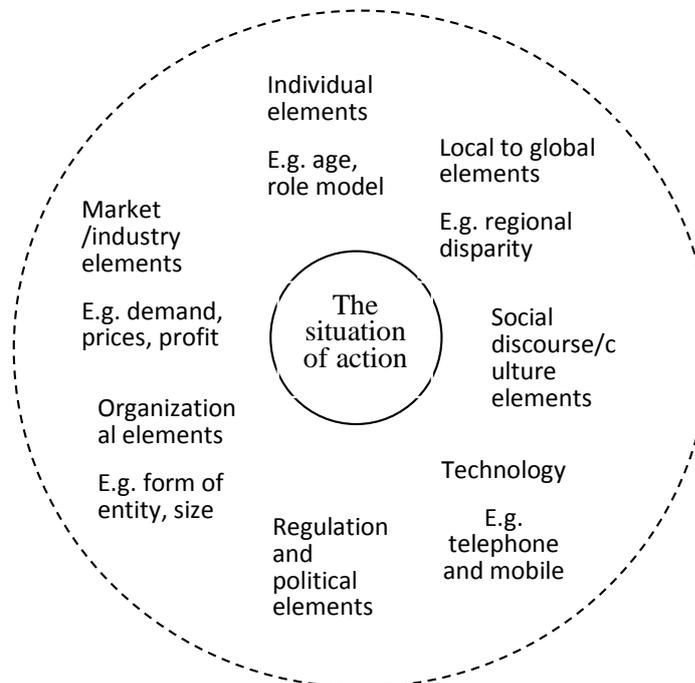
We could not discern the logic of practice behind the story line without portraying how contextual elements “condition” the action ([Clarke, 2003](#), [Clarke, 2005](#)). During the interviews, when respondents narrated their biographic stories of their businesses, they always mentioned the context of their actions. In this section, we focus on the structured conditions of actions using Clarke’s ([2005](#)) three mapping approaches: (1) situational mapping, (2) field mapping, and (3) position mapping. For economy, we combined field mapping and position mapping methods. The basic ideas and languages from Bourdieu’s ([Bourdieu, 1989](#), [Webb et al., 2002](#)) four theoretic constructs form the basis of the following analysis.

The situational map

To draw a situational map, we started with a conditional matrix of actions for each case story ([Strauss and Corbin, 1990](#)), with actions in chronological sequence layout in rows. Then we discerned the various elements of situation around each action and put them next to the action, with different elements in different columns. After applying this process to each action across the cases, we took the situations of all actions as a whole, and moved on to weave together all elements that conditioned the whole set of actions. Then we observed categories and patterns among the elements. Here, we were able to lay out the major human, non-human, discursive, and other elements that relate to “entrepreneurs” actions, which are considered as a whole across cases ([Clarke, 2005](#)). As *Figure 2* shows, in this study the elements around the actions extend from individual element, organizational element, market/industry element, regulation and political element, social discourse/culture, local to global elements and technological elements. For example, age as an individual element is prominent in relation to an entrepreneur’s initial decision to “jump into the sea” ([Wu, 2007](#)). For example, the “entrepreneur” *e* (*Figure 1*, case **E**) reflected his decision of leaving state department and becoming a full-time middleman in the cashmere industry in the following

statement: “in the 1980s, I was very young, and very bold and willing to try everything”. In a similar vein, “entrepreneur” *d* (Figure 1, case D) recalled: “the time I decided to set up a company in the form of Limited Liability, I was still young, and just would like to have my own business”.

Figure 2 the situational map



Particularly noteworthy, when we looked at the basic conditional matrices again, we observed that different elements do not come into play with equal weight across cases, and on different actions along the chronological sequence. Every situation of action or practice is a conjunction of different elements ranging from immediate to distal ones (Strauss and Corbin, 1990), push and pulls (Amit and Muller, 1995). For example, when analysing the move of diversifying into logistics and warehousing industry in *case D*, we highlighted three elements mixed with push and pull: market/industry element, individual element and regulation element. As the focal entrepreneur *d* told us:

Garment industry is a traditional industry and is labour-extensive. It is going down now. In comparison, logistics and warehousing industry is very trendy and promising.... I take it (diversification) as a challenge.

I could not quit even if I did not do well, as I have borrowed money from bank. The bank would not allow me to quit, and they pushed me to upgrade and diversify the business [Translated from Mandarin by the author]

The situational map provokes analyses of relations among the various elements, and between actions and elements. We took a historical view of the elements across the story line, and discerned two trends among the elements: (1) cohort trend, and (2) period trends. This cohort trend can most obviously be seen from comparisons between different age groups/generations. For example, when speaking of attitude towards risk, for the father’s generation, “even if we see an opportunity, if there is risk I will avoid the risk and not do it”. For the younger generation “I will think about controlling the risk and take the opportunity.” The period trend is seen across multiple levels. Here we generally organized the elements into “levels” (Strauss and Corbin, 1990), extending from individual, organizational,

industrial/market, institutional, and to overall social and cultural level. We find there is a life cycle, or stage paced development process among these elements. For example, referring to the market element, an “entrepreneur” told us:

“It is no longer a market for the sake of market, it is a market being coerced, right now the market conditions is not good (little demand)... but because the factory have to guarantee that employee has work to do, so we are forced to purchase more raw masteries, thereby prop up the cashmere price again, and further decrease the demand” [Translated from Mandarin by the author]

Combined field and position analysis

We have discerned the key elements of situations, and the relations between the elements in the cases. However, how these findings might relate to the meso-level field development, specifically, in this study of the field of private business. With its root in symbolic interactionism ([Strauss and Corbin, 1990](#)) and relationism ([Bourdieu, 1989](#)), field analysis focuses on making sense of collective actions ([Clarke, 2003](#)), or of “doing things together” ([Becker, 1986](#)). Related to our study, it suggests the development of private business field is not just a result of individual actions, but of accumulations of multiple individual practices.

Here, we narrated the situation of “let’s jump into the sea” in the cashmere industry in the focal research region. We aim to see how the collective “jump” may relate to field development. During the fieldwork, we were told and generalized that among the first generation entrepreneurs in cashmere industry, there were mainly three groups of people. This is also the criteria we referred to while selecting the six cases. The first group of “entrepreneurs” used to work in government institutions related to cashmere, typically in the nationwide Supply and Distribution department. The second group used to work in state-owned factories related to the textile and garment manufacturing industry. The third group which dominate the whole population of entrepreneurs in cashmere industry were impoverished farmers. These three groups represent the three main career choices in a centrally-planned economy. For clarity, here we gave a brief illustration on the mechanism of cashmere production and manufacture in a strictly centrally-planned economy. First, raw cashmere resources were channelled to the government institution of “Supply and Distribution” by political orders. The “Supply and Distribution” had nationwide divisions distributed across villages, towns, cities and provinces. Then the raw resources were distributed to state-owned enterprises by the “Supply and Distribution” institution, again by political orders. Therefore there existed no exchange along the supply chain. Individual’s engagement in trade was prohibited.

When the economy was being reformed from top-down in 1980s, it started from state permitting individuals to start private businesses in limited industries. This third group of people immediately entered the field of business and became middlemen or tradesmen. What they did was buying and selling raw cashmere materiel, typically buying raw cashmere from remote herding areas dominated by minority ethnic groups. The influence of “Supply and Distribution” is limited in these remote regions. Exchange began to emerge between production sector and raw cashmere resources production sector along the industry supply chain. Therefore these middlemen “fit” ([Lukas et al., 2001](#)) in the institution void ([Puffer et al., 2010](#)) during the transitioning period.

In the 1990s, we witnessed (1) many government institutions inherited from centrally-plan economy gradually phasing out, typically the nationwide “Supply and Distribution” department, (2) the bankruptcy and privatization of state-owned enterprise, and (3) more open

policy towards private business development. As a consequence, the former two groups of people lost jobs during the change. The three groups of people merged and “let’s jump into the sea” as the saying goes. Since 1992, private businesses in cashmere industry began to flourish. However, the development of private business in the cashmere industry is not isolated. As we have found from the prior situational map analysis, the conjunction of the cohort trend and the period trend in our cases implies that new field members from different age groups, organizations, industries, and spaces are constantly entering the field of business and enacting on it. A new merchant class emerged.

Throughout this process, the legitimacy of private business development is constantly been debated and redefined. We observed the trend that the development of private business experienced “forbidden” at the initial stage, then to “permitting”, and then gradually be absorbed and institutionalized into ordinary politics ([Tarrow and Tollefson, 1994](#)). During the “grey zone” ([Boehlje et al., 2005](#)) of transition when the traditional centrally-planned economy have begun to diminish while the new market-oriented exchange mechanism have not yet been fully established, these three groups of people were generally at the periphery of the social structure who were either unemployed staffs/workers, or impoverished farmers. As we linked the multiple micro practices of doing private business from grass roots to the general economic transition, we concluded that the nature of transition is eventually a process of resources redistribution, with central state owned resources redistributed to private individuals, eventually achieving mass flourishing. Therefore the unique expression of entrepreneurship in New China with an emergence of a new merchant class is a form of social movement ([Rao et al., 2000](#)).

Further, we particularly looked into the mode of practices relating to “entrepreneurs” positions in the business field. We find that at an early stage when an “entrepreneur” entered the field of business, the pressure to get the deal done is the order of the day. Plan emerges from practical coping of immediate contingent demands and direct local engagement. As *e* (*Figure 1, case E*) said:

We do business blindly in the past, do what we, come to us, some succeed and some failed. [Translated from Mandarin by the author]

Gradually as the enterprise grew bigger and the entrepreneurs became more experienced. They came to see the big picture, and had more thorough understanding on what was expected in the longer terms. For example, a friend of entrepreneur *a* (*Figure 1, case A*), who is also an entrepreneur in the cashmere industry said the following:

As the enterprise develops, you will know more people, and you will broaden your choices and be more flexible, and you begin to plan for the future... [Translated from Mandarin by the author]

The findings here are also hinted at in Regner’s ([2003](#)) study on decision making in a corporation. Distinctions are made between the centre and edges of the corporate position. He found that strategies made close to the edge of corporation are dominated by inductive modes, while strategies at the centre are dominated by deductive modes. Further the logic of practice at the periphery echoes the concept of “Habitus” ([Bourdieu, 1990](#)), and “effectuation” ([Sarasvathy, 2001](#)), both of which emphasise the primacy of means over ends, and control over the reduction of uncertainty.

Conclusion: Entrepreneurs in the Making

This study was developed around the central issue of the “legitimacy of private business development”. Drawn upon Bourdieu’s sociology work, the article attempts to interpret the emergence of the “entrepreneur” historically and analytically in the realm of social processes. The empirical analysis includes six theoretically sampled cases from the cashmere industry in Northern China. Moving along the timeline of each case, the data, and the theoretical constructs, we created a chronological storyline centring on the sequences of actions taken. The story moved along the metaphor term of “jump into the sea”, and “feel the tide”, and eventually “like a fish in the water”. However, they still did not feel “like a fish in the water”. As our analysis indicates, how an entrepreneur emerges is, first of all, at an individual level, a continuous process of trying to “fit-in”, and a match between their amount of responsibilities and positions in the fields. According to the participants’ sense making, an “entrepreneur” is someone who controls a bigger enterprise and who takes greater responsibility, and they themselves remain on the path to controlling that “bigger enterprise”. Secondly, at the field level, it is a process of trying to “stand-out”, and a form of social movement to achieve mass flourishing, with the legitimacy of private business development is constantly been debated and redefined. Therefore, we conclude, the entrepreneurs, both as a developing entity and a collective identity, along with the field of private business development, are still in the making.

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Older Entrepreneurs: Do They Work Smarter Or Harder?

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Older Entrepreneurs: Do They Work Smarter Or Harder?

Abstract

Entrepreneurs starting their first businesses between the ages of 55 and 64 years represent the fastest growing entrepreneurship segment in America and Australia. There is sparse research on older entrepreneurs with conflicting results, particularly with respect to generational differences. Previous literature on generational differences focuses on family businesses, but characteristics of founders of family businesses are quite different than those of founders of non-family businesses. Consequently, we compare characteristics of older entrepreneurs to younger entrepreneurs as they start new ventures. Are there differences in their work styles and venture performance? This study makes a contribution to entrepreneurship literature by studying the growing phenomenon of older entrepreneurs. We make a contribution to practice by helping older entrepreneurs identify their strengths, which could lead to more successful older entrepreneurs and provide satisfying and rewarding careers to those leaving wage and salary employment to pursue self-employment.

Introduction

Baby Boomers (born between 1946 and 1964) are enjoying longer, healthier, and more active lifestyles. Of interest, the youngest of this influential segment has now reached the age of 50, the age usually used as a dividing point between older and younger workers (e.g., Government of Alberta, 2011). The size and influence of this generation make it important to understand their career transitions, especially with respect to the innovation and leadership involved in entrepreneurial careers. To highlight, statisticians have noted that Australian and American entrepreneurs starting their first businesses between the ages of 55 and 64 years represent the fastest growing entrepreneurship segment (Mayhew 2014).

Although previous research has noted that seniors are less likely to engage in entrepreneurial activity due to health issues, time allocation preferences, and other personal reasons (Curran and Blackburn 2001; Singh and DeNoble 2003, Levesque and Minniti, 2006), mature workers may search out self-employment and business opportunities to maintain their career, income, and self-expression (Álvarez-Herranz, Valencia-De-Lara, and Martínez-Ruiz, 2011). Wainwright and Kibler's (2014) qualitative British study discussed how work-retirement balance was achieved through later stage self-employment. They concluded that older individuals pursued self-employment (businesses from home) as a means to stabilize and augment finances in retirement. Parker and Rougier (2007) concluded that average retirement ages are substantially higher in self-employment than in paid employment, implying that encouraging older retired or unemployed employees to become self-employed could stimulate greater aggregate labour force participation.

There is sparse research on older entrepreneurs (Weber & Schaper, 2011). Previous literature on generational differences focuses on family businesses, but characteristics of founders of family businesses are quite different than those of founders of non-family businesses (Morris, Allen, Kuratko, & Brannen, 2010). De Kok, Ichou, and Verheul (2010) noted conflicting results from prior studies relating age to venturing and called for additional research into the relationship between age and entrepreneurship (e.g. in different countries) and into the macro-economic effects of this development. De Kok et al. (2010) proposed an indirect relationship between age and entrepreneurship indicating that relevant mediators could be missing from the model if a direct relationship is found. Consequently, our study examines how older entrepreneurs compare to younger entrepreneurs in terms of performance and whether there are differences in terms of how much effort and smarts older entrepreneurs

put into their venture. Our culminating research question is: Can older entrepreneurs better utilize their human and social investments to create higher returns on their asset and time investments than younger entrepreneurs?

In this paper we review prior literature and develop a model of working harder and smarter based upon extant entrepreneurship research. Then we propose and test hypotheses related to older entrepreneurs, followed by quantitative analysis and discussion of findings and implications.

This study makes a contribution to entrepreneurship literature by studying the growing phenomenon of older entrepreneurs compared to younger entrepreneurs. We make a contribution to practice by helping older entrepreneurs identify their strengths, which could encourage more seniors to engage in entrepreneurship with greater success and provide satisfying and rewarding careers to those leaving wage and salaried employment.

Literature Review

Researchers (e.g., Curran and Blackburn, 2001; Kautonen, 2008) and relevant practitioner organizations such as the American Association of Retired Persons (AARP) and Canada's Association for the 50 Plus (CARP) generally agree that mature workers are those 50 years of age or older. The United Nations (2007) reported that almost one-third of the working-age population in developed countries will be aged 50 or over by 2050. Additionally, mature workers in developed countries are staying in the workforce longer than in previous years (CARP, 2013). Seniors may be motivated to work longer for reasons related to financial security, social, and personal growth (e.g., Armstrong-Stassen, 2008; Bal and Visser, 2011; Barnes *et al.*, 2004; Kooij, de Lange, Jansen, Kanfer, and Dijkers, 2011; Weckerle and Shultz, 1999). These motivations for staying in the workplace may also shape motivations for starting ventures and the performance of older entrepreneurs.

It is unclear whether older entrepreneurs perform as well, better or worse than younger entrepreneurs. Age UK proposed that after 5 years, 70% of businesses established by older entrepreneurs were still in operation, in contrast to 28% of younger entrepreneurs' ventures (Barnes, Parry, & Taylor, 2004). However, contrasting this, Dahl and Sorenson (2012) studied 15,000 Danish small businesses and concluded that success varies non-monotonically with age, first rising and then declining, with the highest probability of start-up survival peaking at 42 years of age. A similar inverse u-shaped relationship between age and decision to start a business has been confirmed by other studies (Bönte *et al.*, 2007; Millán, 2008). This research implies that older entrepreneurs (over 50 years) face poorer venture performance prospects.

However, individuals who choose to start businesses later in life may have more entrepreneurial resources that can be capitalized in their businesses. Being in a later stage of life may also shape work choices that are different from younger entrepreneurs. The following section proposes potential choices that may distinguish the approach to work and the performance of ventures started by older entrepreneurs from younger entrepreneurs.

Working Smarter

A significant relationship has been found between higher education and nascent entrepreneurship (Rotefoss and Kolvereid, 2005). It is well accepted that entrepreneurs who are able to transform resource stocks such as education, work experience and social networks into human and social capital will enjoy greater firm success (Allen 2000; Brown, Farrel, Sessions, 2006; Burt, 1997; Neergaard, Shaw, Carter, 2005). However, this value may not be long-lasting, for example, a Canadian study of new ventures conducted by Doutriaux (1992) concluded that the direct positive effect of past experiences in marketing, finance,

government contracting, and founders' age declined after two to four years. Additionally, Dahl and Sorenson's (2012) examination of 15,000 Danish small businesses found that industry experience took a second place to how familiar the owner was with the geographic region.

There is support for the interactional effects of prior work experience and knowledge. For example, the combined effect of previous experiences in marketing, finance, government contracting, and founders' age predicted larger startup ventures (Doutriaux 1992). Furthermore, although age is a demographic variable typically used as a control variable, it also seems to intersect with variables related to venture experience and industry familiarity (Álvarez-Herranz, Valencia-De-Lara, and Martínez-Ruiz, 2011; Dahl and Sorenson 2012).

Older founders have had more time to build their networks. Accordingly, they are expected to have better access to information in networks (indicating higher levels of social capital) (De Kok, Ichou, and Verheul, 2010). Álvarez-Herranz, Valencia-De-Lara, and Martínez-Ruiz (2011) examined entrepreneurial activities of nascent entrepreneurs across 22 countries with varying income levels. The results show that entrepreneurs' characteristics influence entrepreneurial behaviour significantly and positively, in the following order: previous experience of the founder, age, and education. The results imply that older individuals may be able to better capitalize on previous knowledge and experience for faster entrepreneurial learning. Other researchers have identified the 'carriage' of embedded career capital when moving from prior employment to venture start-up (Terjesen, 2005). Finally, Eesley and Roberts (2012) concluded it was more difficult to break into mature industries than new industries for inexperienced entrepreneurs.

H1a: The effect of industry experience on net profit is stronger for older entrepreneurs than younger entrepreneurs.

H1b: The effect of start-up experience on net profit is stronger for older entrepreneurs than younger entrepreneurs.

Working Harder

The perceived need for entrepreneurs to work long hours in order to found and operate their own business has been established in the literature (ex. Cooper, Woo, and Dunkelberg, 1988). Filion (1991) included long hours worked in his description of the 'energy' needed to start a business. Baum and Locke (2004) considered how putting in long hours reflected an entrepreneur's passion for the business.

Researchers have found that older entrepreneurs tend to proportionally employ less staff than other age groupings (Kautonen and Down, 2012). However, De Kok, Ichou, and Verheul found that entrepreneurs who start at older age were less likely to work fulltime in their new venture, were less willing to take risks and had a lower perception of their entrepreneurial skills. They may also be looking to leave the business earlier with a sensitivity related to the opportunity cost of time (Kautonen, 2013). Levesque and Minniti (2006) proposed an inverted U-shaped relationship between the number of total working hours and age. Beyond a critical time point, the increase in the value of leisure time would outweigh the increase in the wage rate, prompting individuals to work fewer hours as they aged. Individuals for whom leisure becomes more valuable as they age would reduce the total number of their working hours and the number of hours dedicated to starting a new firm. Even those for whom leisure becomes less valuable as they age would not reduce the total number of working hours but they would still reduce the portion of these hours dedicated to starting a new firm since the present value of the return to entrepreneurship declines.

Parker and Rougier (2007) found that aging self-employed workers were likely to work longer past retirement age than wage and salary workers, regardless of their health. Their results support other research (e.g., Quinn & Kozy, 1996; Quinn 1999) that indicates that self-employment may be used to bridge wage and salary employment with retirement, specifically by allowing aging individuals to reduce the amount of hours they work. In particular, Quinn and Kozy (1996) attributed the net inflow of workers into self-employment late in life, to a desire for flexible hours and gradual retirement.

Such different findings may be a result of different clusters of older entrepreneurs, related to habitual, novice and hobby. In addition older entrepreneurs may just operate differently. Canadian research indicates that older entrepreneurs may involve their family and children more in their businesses (Uppal, 2001), and this could reflect a desire on the older entrepreneur's part to put less of his own hours into the business. A large empirical study by Bates (1990) noted a lessening of owner effort after the age of 55, moreover he noted that those entrepreneurs over the age of 55 were least likely to stay in business, whereas entrepreneurs aged 45-54 were more likely to endure.

H2a: The effect of hours worked on net profit is stronger for older entrepreneurs than younger entrepreneurs.

Investing in the Business

Seniors over 50 are more likely to have built up financial assets than younger entrepreneurs. A Canadian study (Uppal, 2011) identified that higher-income seniors are more likely to be self-employed; a clear reflection on funding requirements for senior start-ups. Although some seniors may pursue hobby micro-enterprises aimed at continuing and promoting an active lifestyle (Hantman and Gimmon 2014; Halabinsky, Potter, Kautonen, 2012), we contend that older entrepreneurs have the resources to invest significantly in their business venture.

H2b: The effect of financial assets on net profit is stronger for older entrepreneurs than younger entrepreneurs.

Methodology

We use the [Comprehensive Australian Study of Entrepreneurial Emergence](#) (CAUSEE) data collected from a representative sample of 559 respondents who owned (or partly owned) a young firm (less than four years old). CAUSEE is a panel study that follows nascent and young firms over time. The firms were identified via random digit dialing phone interviews of over 30,000 Australian households, which provides a random sample of the population increasing the confidence of generalization. Young firms are defined as businesses that were: four years or younger at the time of the screening interview; had already experienced a 12-month period with revenues exceeding costs for at least half of the time; and were sole or co-owned. Applying this procedure, 559 owners completed the first round interview in 2007 (Wave 1). We dropped firms operated by entrepreneurial teams to establish accurately the age of the entrepreneur.

Two path models (i.e., Harder and Smarter models) are tested using AMOS 21. Goodness of fit of the path models under test is evaluated with the χ^2 statistic divided by degree of freedom ($\chi^2/d.f.$), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and the statistical significance (PClose) for RMSEA, as reported in AMOS 21. The absolute goodness-of-fit index χ^2 goodness-of-fit statistic is sensitive to sample size, so that the probability of rejecting a hypothesised model increases as sample size increases. Instead, good fit is assumed for χ^2/df less than 3, CFI greater than 0.95 and RMSEA lower than 0.05 with an insignificant PClose of at least 0.05 (as suggested by Kline, 1998).

Entrepreneurs were judged to be older if they were over 50 when they started their current business. Working harder was measured by hours worked and assets invested in the business (loans and equity). Working smarter was measured by industry experience and start-up experience. Firm performance was measured by Net Profit.

To test our hypotheses we constructed a model of hours worked, assets invested in the business, industry experience, and start-up experience having a positive effect on net profit. This model was run for All Entrepreneurs (See Figure 3), older entrepreneurs (See Figure 4) and younger entrepreneurs (See Figure 5). This group model also had a good fit (See table 7: $\chi^2/d.f. = 2.456$, CFI=.902, RMSEA=.051 and PClose=.447).

Insert Figures 3 to 5 about here

Results

Table 1 gives the descriptive statistics for the whole sample. Table 1 shows that of the sample of 286 entrepreneurs 34% are older. Table 2 provides descriptive statistics for the older entrepreneurs and shows that older entrepreneurs are on average 56.93 year of age. Prior research has identified differences between novice and habitual older entrepreneurs (e.g., Weckerle and Shultz, 1999). Consequently we conducted a t-test to determine whether there was a significant difference between novice and habitual older entrepreneurs in our sample. The t-test showed no significant difference, so we proceeded to treat the older entrepreneurs in our sample as a homogenous group. Table 3 provides the descriptive statistics for young entrepreneurs and shows that they are on average 38 years of age. Table 4 shows the correlation of variables for the whole sample.

Insert Tables 1 to 4 about here

Table 4 shows a highly significant positive correlation between older entrepreneur and industry experience ($\mu = .293$, $p < .001$). Table 4 also shows a positive correlation between older entrepreneur and start-up experience ($\mu = .137$, $p < .05$). But Table 4 shows an insignificant but negative correlation between older entrepreneurs and hours worked ($\mu = .143$, n/s). And Table 4 shows an insignificant positive correlation between older entrepreneur and financial assets ($\mu = .102$, n/s). Finally, Table 4 shows no correlation between older entrepreneur and net profit ($\mu = .002$, n/s). Now we move on to test our hypotheses.

Hypothesis 1a stated that the effect of industry experience on net profit is stronger for older entrepreneurs than younger entrepreneurs. In our model there is no significant difference (Table 8: z-score = .624, n/s) in industry experience between older entrepreneurs ($b = -.049$) and younger entrepreneurs ($b = .020$). Hence Hypothesis 1a, that the effect of industry experience on net profit is stronger for older entrepreneurs than younger entrepreneurs is not supported.

Hypothesis 1b proposed that the effect of start-up experience on net profit is stronger for older entrepreneurs than younger entrepreneurs. In our model there is no significant difference (Table 12: z-score = -0.002, n/s) in start-up experience between older entrepreneurs ($b = .042$) and younger entrepreneurs ($b = .087$). Thus we find that the effect of start-up experience on net profit is the same for older entrepreneurs and younger entrepreneurs.

Hypothesis 2a stated that the effect of hours worked on net profit is stronger for older entrepreneurs than younger entrepreneurs. In our model there is a significant difference (Table 12: z-score = -2.01, $p < .05$) in hours worked between older entrepreneurs ($b = .196$)

and Younger Entrepreneurs ($b = .082$). Thus we find support for Hypothesis 2a, that the effect of hours worked on net profit is stronger for older entrepreneurs than younger entrepreneurs.

Hypothesis 2b hypothesized that the effect of financial assets on net profit is stronger for older entrepreneurs than younger entrepreneurs. In our model there is a significant difference (Table 12: z -score = $.2436$, $p < .05$) in financial assets between older entrepreneurs ($b = .826$) and younger entrepreneurs ($b = .566$). Thus Hypothesis 2b, that the effect of financial assets on net profit is stronger for older entrepreneurs than younger entrepreneurs, is supported.

In summary, our model shows that being older significantly strengthens the positive effect of Hours Worked on Net Profit and being older significantly strengthens the positive effect of Financial Assets on Net Profit. There are no significant differences between older and younger entrepreneurs with regard to the effects of Experience in Industry or Experience in Start-ups on Net Profit. Thus this shows that older entrepreneurs work smarter, not harder.

Insert Tables 5 to 7 about here

Discussion and Implications

This research compares older and younger entrepreneurs' impact on net profit by working harder, through longer hours or higher investment, or by working smarter, through greater industry experience or start-up experience.

We found that although older entrepreneurs have more industry and start-up experience, they do not work more hours or invest more money. In fact, older entrepreneurs work fewer hours. Hence, the older entrepreneurs in our sample did not work significantly harder than younger entrepreneurs. However, we found that the effect of hours worked by older entrepreneurs had a significantly bigger effect on net profit than the time spent by younger entrepreneurs. Similarly, we found that the financial assets invested by older entrepreneurs also had a significantly bigger effect on net profit than the assets invested by younger entrepreneurs. Consequently we concluded that older entrepreneurs do work smarter, not harder.

This study contributes to entrepreneurship theory by indicating that age may not have a direct impact on firm performance but may be mediated by other variables, such as industry experience, start-up experience, hours worked, and assets invested. We also indicate that age could moderate the effects of these variables on firm profit.

This study contributes to entrepreneurship practice by showing that older entrepreneurs can be just as profitable as younger entrepreneurs, despite working fewer hours. This should encourage more seniors to enter entrepreneurship. This should also be an indicator to government policy makers that entrepreneurship can be a viable option to extend the working life and contributions to society of mature workers. Training and funding programs should be developed to assist mature workers to make the transition from the workforce into entrepreneurship.

Our study is limited by its focus on only one country, Australia. We are also limited by taking our data from only one point in time to maximise the size of the sample used. Future research is needed in other countries and to test the relationships of age to other variables to broaden our understanding of the role of older entrepreneurs.

Conclusion

This research finds that older entrepreneurs work smarter, not harder. This dispels the age-related myths of the entrepreneurial underperformance of older entrepreneurs. These myths, if left unchallenged, could result in inappropriate policy decisions and, more importantly, could discourage mature workers from establishing new ventures.

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Table 1. Descriptive statistics (whole sample)

	<i>N</i>	Min.	Max.	M	SD
Older Entrepreneur	286	0	1	.34	.48
Owner Age	286	22.00	74.00	44.74	10.81
Hours Worked	146	.00	85.00	35.55	21.53
Assets	121	700.00	10500000.00	211010.12	978067.48
Exp. Industry	286	.00	62.00	10.10	10.31
Exp. Start	286	.00	1.00	.38	.49
Net Profit	286	-600000.00	1560000.00	58040.05	186578.72

Table 2. Descriptive statistics for older entrepreneurs

	<i>N</i>	Min.	Max.	M	SD
Owner Age	98	50.00	74.00	56.93	5.49
Hours Worked	59	.00	70.00	31.81	18.50
Assets	50	700.00	10500000.00	329604.80	1487508.88
Exp. Industry	98	.00	62.00	14.29	13.25
Exp. Start	98	.00	1.00	.47	.50
Net Profit	98	-600000.00	1560000.00	58581.75	264010.73

Table 3. Descriptive statistics younger entrepreneurs

	<i>N</i>	Min.	Max.	M	SD
Owner Age	188	22.00	49.00	38.39	6.64
Hours Worked	87	.00	85.00	38.08	23.12
Assets	71	1000.00	1500000.00	127492.73	271871.79
Exp. Industry	188	.00	34.00	7.93	7.55
Exp. Start	188	.00	1.00	0.33	.47
Net Profit	188	-80000.00	775894.00	57696.98	115105.03

Table 4: Pearson correlations of major variables for All Entrepreneurs

	1	2	3	4	5
1. Older Entrepreneur	-				
2. Hours Worked	-.143	-			
3. Asset	.102	.156	-		
4. Experience in Industry	.293**	.141	.060	-	
5. Experience in Start-ups	.137*	.087	.137	.120*	-
6. Net Profit	.002	.259**	.784**	.002	.156

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 4. Regression weights whole sample

DV	IV	B	b	S.E.	C.R.	P
Net Profit	<--- Hours Worked	1454.73	.173	480.35	3.03	.002
Net Profit	<--- Asset	.14	.751	.011	13.44	<.001
Net Profit	<--- Exp. Industry	-561.59	-.032	988.73	-.568	.570
Net Profit	<--- Exp. Start	24445.31	.066	20998.86	1.164	.244

Table 5. Regression weights older entrepreneurs only

DV	IV	B	b	S.E.	C.R.	P
Net Profit	<--- HoursWorked	2671.19	.196	1036.51	2.58	.010
Net Profit	<--- Asset	.141	.826	.013	11.07	<.001
Net Profit	<--- Exp. Industry	-922.89	-.049	1426.95	-.65	.518
Net Profit	<--- Exp. Start	20791.75	.042	37702.91	.55	.581

Table 6. Regression weights younger entrepreneurs only

DV	IV	B	b	S.E.	C.R.	P
Net Profit	<--- Hours Worked	399.85	.082	449.76	.889	.374
Net Profit	<--- Assets	.24	.566	.040	6.096	<.001
Net Profit	<--- Exp. Industry	296.32	.020	1335.35	.222	.824
Net Profit	<--- Exp. Start-up	20724.45	.087	21400.99	.968	.333

Table 7. Squared Multiple Correlations (R^2) of Net Profit:

Whole sample	Older Entrepreneurs	Younger Entrepreneurs
.599	.724	.335

Table 8. Differences in effects between two groups

IV	Older Entrepreneur		Younger Entrepreneur		Difference z-score
	b	P	b	P	
Hours Worked	.196	.010*	.082	.374	-2.01*
Assets	.826	**	.566	**	2.436*
Exp. Industry	-.049	.518	.020	.824	0.624
Exp. Start-up	.042	.581	.087	.333	-0.002

Notes: ** p-value < 0.01; * p-value < 0.05;

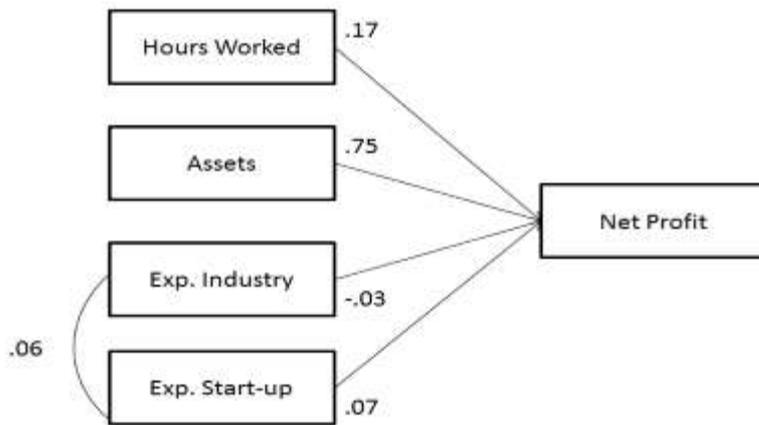


Figure 3. Model predicting net profit for all entrepreneurs

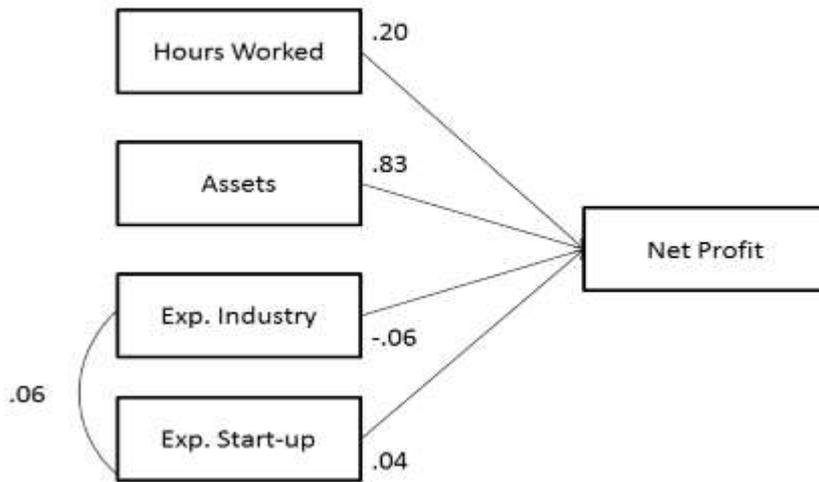


Figure 4. Model predicting net profit for older entrepreneurs only

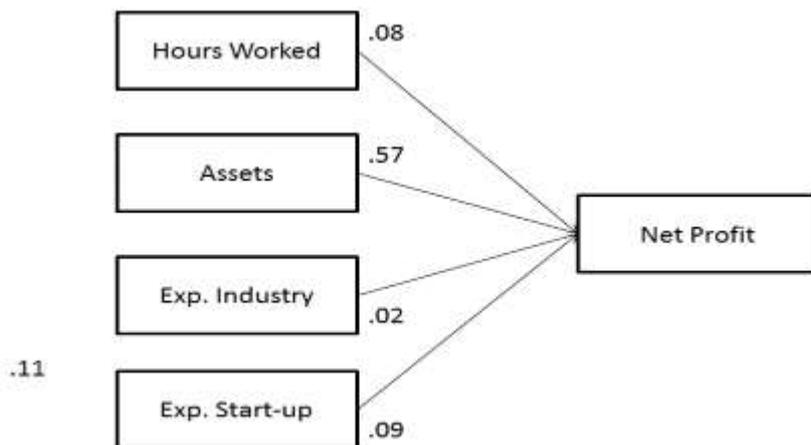


Figure 5. Model predicting net profit for younger entrepreneurs only.

