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Entrepreneurship and bureaucracy explaining economic development across countries Applying the actor-structural approach to economic development

Fredrik Svensson
Department of Social Sciences
Mid Sweden University
831 25 Östersund
fredrik.svensson@itps.se

ABSTRACT:

In this paper, it is shown that national differences in the rate of economic growth can be explained by economic behaviour, entrepreneurship and the efficiency and size of a country's bureaucracy. The analytical framework is based on an actor-structural approach assuming that all social phenomena can be explained by a combination of agency and structure. A model based on an actor-structural approach is offered and tested on cross-national data from 37 countries. Ordinary least square models including entrepreneurship and various structural independent variables are evaluated in terms of explanatory power and compared to traditional one-sided models. The results indicate that entrepreneurship combined with structural variables, including bureaucracy, offer high explanatory values and that a large part of the variance in economic development, left unexplained by agency behaviour, is explained by the regulation of that behaviour. Due to the limited and recent cross-national data on entrepreneurship it is impossible to rule out the possibility that the results are to some extent due to selection, reverse causal links, or relationships excluded from the analysis. In terms of policy implications the results indicate that the removal of bureaucratic barriers to entrepreneurs could have large potential payoffs in terms of economic growth.

Introduction

This paper aims at contributing to the question: What causes some societies to develop and others to stagnate? Since social change or development is a very wide concept, this paper concentrates on economic development operationalised as long-term economic growth. In social and economic sciences, the attempts to explain economic development are numerous and diverse. A large number of highly heterogeneous independent variables, contributing to or hindering economic development, have been identified by theoretical and empirical research (Barro 1998; Barro and McCleary 2003; Berggren 2003; Evans and Rauch 1999; Ginsburg 2000; James Gwartney, Lawson and Emerick 2003; Knack and Keefer 1997; Minniti, Bygrave and Autio 2005; Whiteley 2000).

In this paper, the scope is beyond considering separate explanatory variables and testing their contribution to economic development; rather, entire models are considered. The standard method of testing separate independent variables involves introducing the variable in question into a standard model consisting of variables that previous empirical researches have found to be important. These are, typically, GDP per capita, levels of investment and savings, and education. In cross-national research, the size of these models are generally kept small due to the miniscule number of observations available. Occasionally, dummy variables for regions are included. If the introduced variable contributes explanatory power, it is accepted as such.

In this paper, it is argued that models that combine both agency and structural factors are more likely to be successful in explaining economic development than models that do not do so. Similar to several other researchers (Julien 1989; Schumpeter 1934; Shane 2003), I will argue that entrepreneurs are the agents of economic change but that their contribution to economic development is dependent on the environment in which they operate, their structure. It is held here that structure has to be included in the analysis and that this two-sided model will result in higher explanatory power as compared to the traditional one-sided approaches.

Entrepreneurship will be used as an example of a typical agency-based theory, and economic freedom and social capital as examples of structurally-based theories. The choice of these examples is based on their frequent appearance in recent social research as well as in policies related to economic development. Following this, the paper presents a model based on the actor-structural approach combining agency and structural factors to explain economic development, in this case, entrepreneurship combined with different structural factors: economic freedom, bureaucracy, social capital and taxation. Finally, this argument is tested empirically on cross-national data and upheld.

The introduction of this paper is structured in the following way. The first theoretical section discusses development theory and how the various explanatory factors are related to economic development in the traditional one-sided approaches. This is followed by a section that describes the two-sided agency-structure approach in relation to economic development and outlines the analytical framework of this paper.

Development Theory

The interest in economic development is shared by social and economic scientists. While social scientists tend to produce development theory, economists tend to produce growth theory. Analytically, economic development and economic growth are not synonymous. Long-term economic growth is, however, frequently used as a proxy for economic development, assuming that these different theoretical phenomena are strongly empirically correlated. Since long-term economic growth is often used as a proxy for economic development, these two research approaches are, in practice, trying to explain the same empirical phenomenon. The difference between growth and development theory therefore does not necessarily involve the dependent variable. Instead, the difference appears to lie in the scientist's academic identity. In effect, these two academic communities are trying to explain the same phenomenon, using their own independent factors; the social scientists use factors such as norms, trust, networks and dependency, while the economists use factors such as capital, savings, investment, fiscal policy and taxation.

To most social scientists, it is obvious that the initial causes of economic development are not economical. It can be argued (Soto 2002) that the proposed economical explanations do not explain why people in certain countries save, invest and create more wealth than those in other countries. And indeed some of these economic 'causes' appear more like development itself, than the real causes of development. Even in the field of economic growth theory, 'non-economic' factors are frequently used as explanatory variables to explain economic development/growth (Barro 1997; North 1990; Schumpeter 1934). One general conclusion derived from previous economic research is that one has to look beyond the narrow economic factors to find the real determinants of economic development (Barro and McCleary 2003; Soto 2002). On the basis of this conclusion, I will concentrate on the non-economic causes of economic development in this paper.

Entrepreneurship and development

The idea that entrepreneurship is essential for economic development is shared by almost everyone (Julien 1989). To most researchers entrepreneurship is about behaviour and newness. There appear to be at least two competing views on what this newness consists of. While Schumpeter (1934) and his followers would argue that new ideas are entrepreneurship, Gartner (1992) and others would argue that new organizations are entrepreneurship. Others again may argue that entrepreneurship is the establishment of a new organization based on a new idea. This reasoning gives us a four-field matrix; see Figure 1.

Figure 1. The newness of entrepreneurship; new idea, new organization, or both.

		Organization	
		New	Old
Idea	New	1	2
	Old	3	4

While there would be little controversy regarding cell 1 and 4; cell 1 is entrepreneurship and cell 4 is not. When it comes to cell 2 and 3, it is a matter of opinion. The followers of Schumpeter would consider cell 1 and 2 as entrepreneurship, while Gartner would consider cell 1 and 3 as entrepreneurship. Others, forced by data limitations, define entrepreneurship as business ownership and measure it by the number of business owners as a share of the total labour force (Audretsch and Thurik 2001).

Several researchers have theoretically and empirically tried to link entrepreneurship to economic development/growth (Audretsch and Thurik 2001). Independent of the entrepreneurship definition, entrepreneurs are believed to introduce newness into the economy by starting new businesses, introducing new ideas and/or exploiting new resources. By doing this, entrepreneurs act as agents of change; and hence, at the aggregated level, more entrepreneurs mean more development. The theoretical reasoning clearly varies according to the definition of entrepreneurship and the theoretical framework used. The apparent consensus concerning the positive consequences of entrepreneurship is, however, superficial since many see entrepreneurship as a free service (Julien 1989) and not something that causes economic development. Similarly, institutional writers such as de Soto (2000) claim that developing countries are teeming with entrepreneurial activity and that differences in entrepreneurial activity therefore cannot explain differences in economic development. Several researchers in the economic growth field are also trying to include the discovery of new ideas and methods of production in explanations for long-term growth (Barro 1996).

Economic freedom and development

Probably the most influential development theory in recent times is that of economic freedom. Economic freedom implies ‘the degree to which a market economy is in place, where the central components are voluntary exchange, free competition and protection of persons and property’ (Gwartney and Lawson 2002). It is believed that voluntary exchange, free competition and protection of persons and property encourages economic agents to engage in growth enhancing activities, such as pursuit of profit, innovation, hard work and so on. In an unfree economy, these activities are not rewarded and are therefore less frequent.

Several attempts have been made to quantify economic freedom internationally. One example, The *Index of Economic Freedom*, is published annually by the Heritage Foundation. This index include trade policy, property rights, size of government, business regulation etc. There is a large body of research, using a wide range of theoretical frameworks and control variables, examining the effect of economic freedom on development/growth and the positive relationship seem very robust (Berggren 2003; Doucouliagos 2005; Gwartney and Lawson 2002).

However, since these indexes include a large number of factors, it is very difficult to determine which factors promote economic development and which do not. And some empirical research has found theoretically unexpected results. Carlsson and Lundström (2002) found that a liberal trade policy and the size of government are significantly and

negatively correlated to growth, implying that big governments and restricted trade regimes promote growth. The large number of aggregated components in these indexes and the fact that some of the components are negatively correlated to growth makes the causal reasoning very fuzzy. The number of aggregated components is too large to be theoretically interesting and to have specific policy implications. Furthermore, these indexes are not only about freedom, they also include components measuring institutional quality and macro-economic conditions such as judicial independence and recent inflation, respectively. Taxation and bureaucracy are aspects of economic freedom. High taxes are often perceived as an impediment to economic development by liberal economists. Taxes are perceived to drain resources from the productive private sector and thereby limiting the freedom and capabilities of the economic actors.

Social capital and development

Since the publishing of Putnam's *Making Democracy Work* (1993b), social capital has attracted immense interest in the field of social sciences and been used to explain a wide range of social phenomena, including economic development. Social capital, however, is a very wide concept. Three main meanings of the term can be identified; trust, civic norms and associational activity (Knack and Keefer 1997). Of these, Knack & Keefer found trust and civic norms to be significantly and positively correlated to long-term economic growth using cross-national data on 29 market economies. Associational activity, Putnam's definition of social capital, was not found to be correlated to long term growth. According to Coleman (1988), social capital does not lie in the individual agent, but in the relations between the agents. Others view social capital, particularly trust, as a personal attitude.

The causal link between trust and economic growth is simple. Individuals in high-trust societies do not require to spend much time protecting themselves, writing contracts, monitoring business activities and so on. Trust makes business transactions simple and efficient and the need for formal legal institutions to mediate conflicts is small. Behaviour is controlled by common norms rather than by explicit written rules. In low-trust societies, every transaction is a risk to a greater extent, and this is likely to hamper economic activity and growth. For a detailed discussion on the causal relationship between trust and economic growth, see Knack & Keefer (1997) and Whiteley (2000).

The agency-structure approach in development theory

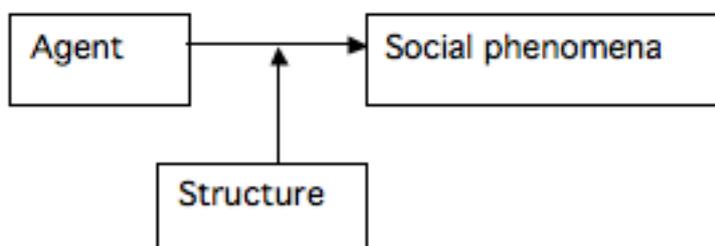
In the social sciences, there are three main approaches regarding agency and structure; these are the actor theoretical approach, the structural theoretical approach and the actor-structural theoretical approach (Rundqvist 1998). The actor-structural approach can be subdivided into a conflationary and a non-conflationary type (Archer 1995). The actor theoretical approach, sometimes referred to as methodological individualism (Martin and McIntyre 1994), argues that social phenomena are explained by agency factors and that social structure is a mere aggregate of agency behaviour. Agency behaviour is

not determined by structure and all social phenomena can be completely explained by agency. Hence, in a theoretical sense, there exists no structure. Applied to economic development this school of thought argues that development can only be explained in terms of agents; their education, entrepreneurial spirit, psychological characteristics, experiences etc (Barro 1996; Barro 1998; Heertje 2004; Krueger and Lindahl 2001).

The structural theoretical approach, on the other hand, sometimes referred to as methodological collectivism (Martin and McIntyre 1994) argues that social phenomena are explained by structural factors, and that agency behaviour is a consequence of social structure. Agency behaviour is determined by structure and since all social phenomena can be completely explained by structure, in a theoretical sense, there are no agents. Applied to economic development this school of thought argues that development can only be explained in terms of structure; social norms, rules and circumstances such as social capital, legislation, taxation, bureaucracy etc (Ginsburg 2000; North 1990; Platteau 2001; Putnam, Leonardi and Nanetti 1993a).

In the non-conflationary actor-structural approach, it is stipulated that social reality consists of both agency and structure and that these are not the same thing. Hence, agency and structure cannot be reduced to one another. Structures do not melt away into agents, nor agents into structures (Sztompka 1991). This ontological idea of society's two-sidedness is regarded as a prerequisite for the logical connection between the theory and the empirical application of any research question (Rundqvist 1998). This non-conflationary approach is not only distinctly different from the actor theoretical approach and the structural theoretical approach but also different from Giddens conflationary theory of structuration (Giddens 1984), in that, it views agency and structure as being analytically distinct from each other (Archer 1988).

Figure 2. An ontological model based on the non-conflationary actor-structural approach.



The theoretical framework in this paper is based on a non-conflationary actor-structural approach; see Figure 2. Agency behaviour is not entirely a consequence of structure, and structure is more than aggregated actions. This implies that neither of the one-sided approaches can fully explain social phenomenon (Archer 1988). According to this non-conflationary actor-structural approach, an agent is a social unit that could have acted otherwise, i.e. the agent can choose between different actions. The agent

can be individuals, groups of individuals, companies and so on depending on the analytical level. Structures are social features, external to the agent, that enable, limit or determine the agent's behaviour. Structures can become a cause only by influencing or transforming the effects of agency behaviour. The link between structure and the social phenomena to be studied is therefore indirect. The empirical application of the actor-structural approach in this study begins with entrepreneurship as the explanatory agency factor and economic development as the dependent factor. Structural factors with relevance to entrepreneurship are introduced in accordance with the actor-structural approach. The structural factors are selected because they can enable, limit or determine entrepreneurial behaviour. In this way structure influences the link between entrepreneurship and economic development. Structural factors that have no direct link to entrepreneurial behaviour are not considered. Different agents and types of agents have different structures. Due to this emphasis on agency and its structure, it might be more appropriate to call this approach the 'agency in structure' approach.

Entrepreneurship, bureaucracy and development

In a market economy, economic development is a consequence of private entrepreneurs and enterprises and there can be no direct link, as discussed above, between the structural/institutional environment and economic development. The behaviour of these entrepreneurs is regulated by different aspects of the entrepreneurial environment (Gnyawali and Fogel 1994). In this paper I concentrate on the bureaucracy as an important aspect of the entrepreneurial environment. Entrepreneurs are the actors and bureaucracy is the structure. The behaviour of the actors has to be regulated by the bureaucracy to avoid its potentially negative effects on other actors. If the bureaucracy can do this without imposing a burden on the creation and development of businesses, the bureaucracy is beneficial to the development of the economy. If not, the bureaucracy will be an obstacle to the creation and growth of individual firms and to the aggregated economic development at the national level. The behaviour of the economic actors is also of consequence; if they behave entrepreneurial, i.e. if they are creative and exploit new possibilities, the economy will develop at the aggregated level.

Much earlier empirical research have found that entrepreneurship is a major contributor to economic development (Audretsch and Thurik 2001; Barro 1996; Bosma and Harding 2006; Shane 2003) and that the legal framework and the manner in which it is implemented by the bureaucracy are major obstacles for these entrepreneurs (Soto 2000; Soto 2002; Svensson 2003; World Bank 2006). de Soto appears to reason in a similar way, claiming that the main obstacle for poor entrepreneurs is the legal system, which excludes them and forces them to operate outside the law. Entrepreneurs forced to operate outside the legal system are unable to benefit from the institutions that are essential for operating a business, i.e. property rights, insurance, banking and so on, and are therefore at a disadvantage. 'Bad laws', such as licensing, force them to operate informally and deprive them of opportunities to enjoy the 'good laws' such as property rights. de Soto's good and bad laws show some similarity to Giddens (1984), enabling

and constraining structures. However, de Soto's explanation is purely structural; he argues that economic behaviour, such as entrepreneurship, is a rational response to the institutional environment, and therefore, not a cause in itself. If entrepreneurship is a direct response to the institutional/legal framework, the structure, differences in economic development cannot be explained by differences in behaviour, but only by differences in structure. Since my argument states that agency and structural factors have to be combined to explain the differences in economic development, I obviously disagree.

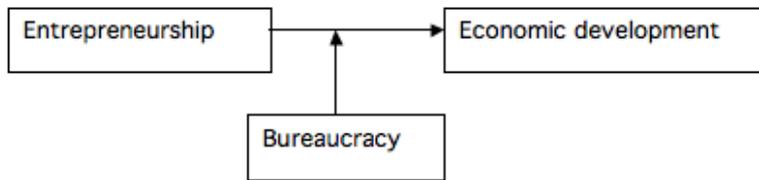
The bureaucracy can be an obstacle to the entrepreneurs in a number of ways. Firstly, it can be ineffective, i.e. it can delay the procedures required to start and develop a business, demand bribes and so on. Secondly, the bureaucracy can differ in terms of size, i.e. it can differ in the number of aspects of a business that it regulates. It can also differ in the strictness of these regulations. Others have concentrated on the positive effects of bureaucracy on economic development; Evans and Rauch (1999) found a positive correlation between 'Weberian' state structures and economic development. The effectiveness of the bureaucracy is strongly correlated to the level of economic development; richer countries are able to spend more money on the bureaucracy to ensure that it works effectively. Poor countries cannot sufficiently remunerate workers in the bureaucracy to assure high motivation etc. As a consequence, bureaucracies in poor countries tend to be ineffective and/or corrupt. The correlation between the level of economic development (GDP/capita 1995) and Transparency International's Corruption Perception Index (CPI 2003) (www.transparency.org) is very strong ($r = 0,86$).

Concerning the creative entrepreneurs, those exploiting new ideas, the bureaucracy can be double-trouble. The creative entrepreneur faces another set of obstacles, unknown to the ordinary business owner. These obstacles usually originate from the newness that the entrepreneur wishes to introduce. In the words of Schumpeter, 'every step outside the boundary of routine has difficulties and involves a new element' (Schumpeter 2000). The bureaucracy occasionally has great difficulty in dealing with new ideas. This is probably because the bureaucracy is built on rules and that new ideas do not fit the rules based on experience. Research on the relation between business owners and the bureaucracy have shown that creative business owners find bureaucracy much more troublesome than the 'ordinary' business owners (Svensson 2003).

The main hypothesis in this paper is based on the assumption that bureaucratic regulation (subsequently referred to as bureaucracy) is the main structure of entrepreneurial behaviour (subsequently referred to as entrepreneurship), that is, it can enable, limit or determine entrepreneurial behaviour. It can enable entrepreneurial behaviour by providing the necessary legal institutions and offering efficient services etc. and limit or determine entrepreneurial behaviour by requiring business licenses, handle applications inefficiently etc. In other words, the bureaucracy forms a significant part of the environment in which economic agents, such as entrepreneurs, operate. However, these entrepreneurial attempts to start businesses are not regarded as a mere structural

consequence. Rather, the bureaucracy decides if these entrepreneurial attempts will lead to aggregated economic development or not; see Figure 3.

Figure 3. The actor-structural approach applied to economic development.



The application of this reasoning on economic development results in the following hypotheses.

Hypothesis 1: High levels of entrepreneurship contributes positively to a country's economic development.

Hypothesis 2. High levels bureaucracy contributes negatively to a country's economic development.

Hypothesis 3. Other relevant structural variables (economic freedom, social capital and taxation) affects a country's economic development.

In order to accept hypotheses 1, 2 and 3 independent variables have to be significant ($p < 0,10$) and remain significant when introducing control variables in the model. In hypothesis 3 it is tested if other, to the entrepreneur, relevant structural variables (economic freedom, social capital and taxation) has an effect on development similar to the effect of bureaucracy. It is also assumed, based on the agency-structural approach, that the adjusted R^2 is higher is in the two-sided models as compared to the one-sided models. Two-sided models combine entrepreneurship with relevant structural variables.

Method and data

In order to evaluate the different types of development theories and factors used to explain economic development, cross-national data and multiple regression models (OLS) are used. The evaluation of the theories pertains only to each theory's ability to predict in terms of explanatory power. Admittedly, this is a very limited method to judge the quality of a theory, since the quality of theories is also related to logic coherence, elegance and so on (Craib 1992). However, the ability to predict is empirically testable; and therefore, the only way to objectively evaluate a theory aimed to predict. Therefore, a statistical measure, adjusted R^2 is used to compare the models. The unadjusted R^2

can be interpreted as the share of dependent variable variance explained by a model. A model with extra predictors will always have a larger R^2 ; but the adjusted R^2

compensates for the model's complexity and number of observations. Therefore, a fairer comparison between models can be provided in terms of explanatory power (Hair 1998). Adjusted R² is therefore a better measure of model 'quality' as compared to the R². Cross-national analysis is definitely not the ultimate evidence of a theory's ability to predict, although I would venture to say that it has some advantages. Since all the different sources of national statistics refer to the same research units, it is possible to combine data from different sources. This makes it possible to test theories that would not have been possible otherwise. Clearly, all methods have their own pros and cons, and good insights into the development phenomenon may be achieved using a wide range of methods. For a lengthier discussion on the pros and cons of cross-national analysis, see (Herkenrath 2002).

In order to be able to compare the different theories, I will use the same dependent variable in all the tests, although I am well aware of the fact that several proponents of the different theories will argue that it is not adequate or accurate. I have chosen the World Bank's measure of average annual GDP growth between 1990 and 2001 (World Bank 2003) as my dependent variable. This period should be long enough to negate the economic cycles of different countries in the analysis.

As regards independent variables, internationally comparable data on, entrepreneurship, social capital, economic freedom, bureaucracy and taxation levels are collected from different sources. The variables used and their origins can be found in Appendix 1. As a first choice data from the beginning of 1990-2001 period was used. When this has not been possible, data from other years have been used and the variables stability over time has been evaluated. All independent variables appear to be relatively stable over this time period. Due to this I have, throughout, chosen to use data for a year with a full set of data, rather than use data for the initial years of the period with data available for a much smaller number of countries. Since multiple regressions are used in the statistical analysis, it is important not to limit the number of cases in each regression.

The international data on entrepreneurship, produced by the Global Entrepreneurship Monitor (GEM), perceives new organizations as an indicator of entrepreneurship. TEA (Total Entrepreneurial Activity) is measured as the share of the adult population involved in entrepreneurial activities. The TEA measure varies from 18,9% in Thailand to 1,8% in Japan. I used the GEM cross-country data from 2003 on the level of entrepreneurial activity in the models, as this data is much larger ($n = 37$) than the older data. The levels of entrepreneurial activity appear to be a very stable phenomena (Reynolds et al. 2001); and therefore, I assumed that the data from 2003 is a relatively good measure for the whole period. The data published in 2003 refers to respondent behaviour in the preceding 36 months. The sample is dictated by the availability of the TEA measure from the GEM research (Reynolds et al. 2002), 37 market economies in 2003. These countries are: Argentina, Australia, Belgium, Brazil, Canada, Chile, Croatia, Denmark, Finland, France, Germany, Hong Kong (China), Hungary, Iceland, India, Ireland, Israel, Italy, Japan, Korea, Republic of Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Russian Federation, Singapore, Slovenia, South Africa, Spain, Sweden,

Switzerland, Taiwan (Taipei), Thailand, United Kingdom and United States.

As a measure of economic freedom The Economic Freedom Index (EFI) is used (Gwartney and Lawson 2002). It is defined as the “freedom that is concerned with the material autonomy of the individual in relation to the state and other organized groups” (Kane, Holmes and O’Grady 2006). The measure on bureaucracy is taken from the same source. This measure includes factors such as ease of obtaining a business license, corruption in the bureaucracy, regulations that impose a burden on a business and so on. This data is available for 156 countries, for the year 1999. The countries are graded on an ordinal scale from 1 to 5, where 1 implies that ‘existing regulations are straightforward and applied uniformly to all businesses, regulations are not much of a burden for business and corruption is nearly nonexistent’, and 5 implies that ‘the government impedes the creation of new businesses, corruption is widespread and regulations are applied randomly’. Both these variables limit the freedom of entrepreneurs and should therefore correlate negatively with economic development.

The measure on taxation, defined as tax revenue as % of GDP, is from the World Bank Development Indicators and OECD Revenue Statistics. This measure varies from 8 % to 44 %. This variable is believed limit the freedom of entrepreneurs and therefore negatively correlated to economic development.

Cross-national data on social capital is scarce; the best available measure appears to be the World Values Surveys measure of trust. In order to assess the level of trust in a society, the World Values Surveys asks a simple question: ‘Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people?’ The percentage of people who trust other people varies from 63,7% in Norway to 4,7% in Brazil. (www.worldvaluessurvey.com). Data on social capital is not available for Thailand and Hong Kong and regressions’ including social capital is therefore excluding these two countries. High values of social capital, meaning high levels of trust, should make business transactions easier for the entrepreneurs and this variable should therefore be positively correlated to economic development.

Since several independent variables are correlated to the level of economic development, a measure from the middle of the period (1995) of gross domestic product per capita in U.S. dollars in is used as a control variable. For all bivariate correlations and potential multicollinearity problems see appendix 2.

Table 1. Descriptive statistics of variables used in multiple regression models.

Variable name and source	N	Mini- mum	Maxi- mum	Mean	Std. Deviation	Data from the year
Total entrepreneurship activity (%) (Global Entrepreneurship Monitor)	37	1,8	18,9	7,8	4,5	2003
Social capital (% ‘yes’) (World Values Surveys)	35	4,7	63,7	35,2	13,7	1981, -90, -95, -98, -99, -01.

Index of economic freedom (Heritage Foundation Index of Economic Freedom)	37	1,3	3,8	2,3	0,6	1999
Bureaucratic regulation (Heritage Foundation Index of Economic Freedom)	37	1,0	4,0	2,6	0,8	1999
Taxation level (% of GDP) (World Bank Development Indicators and OECD Revenue Statistics)	37	8,0	44,0	27,2	9,6	1998
GDP per capita (U.S. dollars) (World Bank Development Indicators)	37	381	43639	17598	11935	1995
Average annual GDP growth (%) (World Bank Development Indicators)	37	-3,7	7,7	3,1	2,0	1990-2001

Results

The bivariate correlation between the level of entrepreneurial activity and economic development is positive and significant at ($n = 37$, $r = 0,51$), all bivariate correlations can be found in appendix 2. When controlling for GDP/capita, the level of entrepreneurial activity remains significant (model 1 in Table 2). In a simple one-sided model higher entrepreneurial activity in a country appears to result in faster economic development.

A bivariate correlation between the level of social capital and economic development depicts a weak insignificant positive relationship, ($n = 35$, $r = -0,08$). The effect of social capital on economic development remains insignificant even when the level of GDP/capita is included as a control variable (model 2 in Table 2). Adjusted R^2 at $-0,05$.

The Index of Economic Freedom is positively and significantly correlated to economic development ($r = 0,29$, $n = 37$). The minus sign only indicates the manner in which the index is constructed. When controlling for GDP/capita, the same measure remains

significant (model 3 in Table 2). Economically free countries appear to develop faster than economically unfree countries. A model that includes the pure bureaucracy variable (model 4 in Table 2.) and GDP/capita results in a significant ($p < 0,05$) bureaucracy variable with the expected sign.

Table 2. One-sided approaches. Agency or structure explaining economic development. Coefficients with standardized coefficients in parentheses.

	Explana- tory vari- able	1	2	3	4	5
Agency variable	Entrepre- neurship	0,25*** (0,56)				
Structural variables	Social capital		0,01 (0,04)			-0,01 (0,07)
	Eco- nomic freedom			-1,89*** (0,55)		-1,97** (-0,55)
	Bureau- cracy				-1,17 ** (0,44)	
	Taxation level					0,02 (-0,09)
Control variable	GDP/ capita	0,02 (0,13)	-0,01 (-0,07)	-0,07** (-0,43)	-0,04 (0,24)	-0,07 (-0,37)
Constant		0,71	3,42	8,78	6,88	9,79
N		37	35	37	37	35
F-value		6,36***	0,15	4,24**	3,77**	2,00
R ² (Adjust- ed R ²)		0,27 (0,23)	0,01 (-0,05)	0,20 (0,15)	0,18 (0,13)	0,21 (0,11)

*p < 0,10 **p < 0,05 ***p < 0,01

As shown above, the entrepreneurship variable and the different structural variables, used in one-sided models, cannot explain much of the observed differences in economic development. Even if all structural variables are included in the same atheoretical model (model 5 in Table 2) adjusted R² remains at a very low level, i.e. 0,11. These results

suggest that economic development cannot be explained successfully by using agency and structural variables separately.

A two-sided multiple regression model that includes entrepreneurship and bureaucracy as independent variables, and controlling for differences in GDP/cap, results in a considerably higher adjusted R² (model 6 in Table 3). This suggests that the model has a good fit and that almost 40% of the variation in economic development can be explained by a combination of entrepreneurial activity and bureaucratic size and efficiency. It also implies that a large part of the variance, left unexplained by agency behaviour in model 1, is explained by the regulation of that behaviour. The impact of the separate independent variables on economic development shows that a one percent increase in entrepreneurial activity causes a 0,24 increase in the average annual growth. A one step change in the bureaucracy variable causes a 1,12 % change in the average annual growth. The standardized coefficients show that the impact of these two independent variables is roughly equal. To test the robustness of this central model two outliers are removed. Thailand and India combine extremely high levels of entrepreneurship, 18,9 % and 17,9 % respectively, with high growth rates. It might be that the high explanatory values in model 6 are strongly affected by these two countries. However, computing the regression excluding these two countries, not shown, entrepreneurship and bureaucracy are still significant ($p < 0,01$). Further adjusted R² and the coefficients are only marginally affected. The main hypothesis of this paper can therefore not be rejected.

Table 3. The two-sided approach. Entrepreneurship, in different structural settings, explaining economic development. Coefficients with standardized coefficients in parentheses.

	Explanatory variable	6	7	8	9	10
Agency variable	Entrepreneurship	0,24*** (0,55)	0,29*** (0,66)	0,22*** (0,49)	0,30*** (0,61)	0,33*** (0,68)
Structural variables	Social capital				-0,02 (-0,13)	-0,01 (-0,03)
	Economic freedom			-1,51** (-0,44)		

	Bureau- cracy	-1,12*** (-0,42)	-1,22*** (-0,46)			-1,14** (-0,40)
	Taxation level		-0,01 (-0,04)			0,05 (0,23)
Control variable	GDP/capita	-0,02 (0,01)	-0,05 (-0,22)	-0,03 (-0,17)	-0,04 (-0,21)	-0,00 (-0,02)
Constant		4,17	2,87	5,42	0,79	2,38
N		37	37	37	35	35
F-value		8,29***	6,86***	7,02***	4,99**	5,41***
R ² (Ad- justed R ²)		0,44 (0,39)	0,46 (0,39)	0,41 (0,35)	0,33 (0,26)	0,48 (0,39)

*p < 0,10 **p < 0,05 ***p < 0,01

In model 7, the level of taxation is included. The level of taxation variable is not significant and adds no explanatory power.

In model 8, the bureaucracy variable is replaced by the economic freedom variable. Although economic freedom is significant, it reduces the explanatory power as compared to model 6. This is remarkable since the economic freedom variable contains 10 aspects of economic freedom, and the bureaucracy variable is one of these 10 aspects. This suggests that some aspects of economic freedom have no, or theoretically unexpected, effect on economic development.

In model 9, the bureaucracy variable is replaced by another structural variable, i.e. social capital. In this model, high levels of social capital does not significantly contribute to economic development or increase explanatory power.

In model 10, entrepreneurship is combined with all structural variables, except economic freedom (because of strong theoretical and statistical association with the bureaucracy variable). As compared to model 6 adjusted R² is not affected and the entrepreneurship and bureaucracy variables remain significant.

The control variable, GDP/cap, is insignificant in all the two-sided models indicating that the gap between rich and poor countries has remained stable in relative terms. This result could have been affected by the fact that poor non-western countries are under-represented in the sample.

To sum up the results, in terms of explanatory power, models based on the actor-structural approach are better than those based on either of the one-sided approaches. By

departing from the entrepreneurship variable and adding relevant structural variables, a new theoretically-founded explanation on economic development can be offered.

DISCUSSION

The results presented in this paper suggest that development theories have to combine agency and structural variables to be able to explain the empirical phenomenon of economic development successfully. The theoretical combination of entrepreneurship and relevant structural variables considerably increases the explanatory power. Adjusted R^2 fluctuates between -0,05 and 0,23 in the case of the purely structural or agency theories, and between 0,26 and 0,39 in models where entrepreneurship and relevant structural variables are combined. This suggests that the variance left unexplained by the entrepreneurship variable, the residual from model 1, is strongly correlated to the relevant structural variables. In other words, the link between agency behaviour and economic development is dependent on the regulation of agency behaviour, the bureaucracy in this case. It is not my proposition that these two types of variables can be combined anyhow and result in high explanatory power. Any structural variable combined with any agency variable will not automatically result in high explanatory power; clearly, the choice of variables matter. Maybe the 'agency in structure' approach might serve as a guideline on combining agency and structural variables for high explanatory power, departing from the agency variable and thereafter adding its structure in the analysis. However, the data presented here cannot offer any convincing evidence on this as a general rule.

The two main hypotheses suggest that economic behaviour (entrepreneurship) and the regulation of this behaviour (bureaucracy) explain a large part of the cross-national variance in economic development. Both independent variables significantly contribute to economic development and remain significant in models including various control variables. The explanatory power (adjusted $R^2 = 0,39$) is higher than in any of the one-sided approaches. These two main hypotheses can therefore not be rejected.

Concerning hypothesis 3 the results are mixed, social capital, taxation and the control variable (GDP/capita) have no effect on economic development. However, it is possible that the social capital has different functions in different types of countries. In poor countries, where the bureaucracy tends to be ineffective, social capital might be more important. In this manner, dysfunctional bureaucracies might be replaced by a high level of social capital, or at least carry out a similar function. Knack and Keefer (1997) have argued that in some circumstances social capital might replace an efficient bureaucracy and reliable legal institutions, and that social capital is more important in societies that lack reliable legal institutions. In these societies, businesses cannot rely on the legal institutions to settle disputes between economic actors. They have to rely on the trust and common norms between and shared by the actors. This is particularly true for informal businesses that are excluded from legal protection and have to rely on social capital. Knack and Keefer (1997) found empirical support for this suggestion. The data presented in this paper, however, does not indicate that this

might be true. The sample in this study is too small to divide further, and therefore, cannot be used to shed further light on this issue. However, it makes theoretical sense to argue that in the absence of a functional legal framework, social capital becomes more important. This issue deserves further investigation. The non-existing effect of the level of taxation conforms with de Soto (2002) findings. Using qualitative methods he similarly concluded that taxes are a very small problem for small entrepreneurs, as compared to ‘other legal costs’. The other costs originate from trying to comply with or evade bureaucratic regulation. Small and efficient bureaucratic regulations appear to be more important than low taxes. Higher taxes, if used to make the bureaucracy more efficient, could promote economic development. Entrepreneurship, economic freedom and bureaucracy all seem to have a robust effect on economic development with the theoretically expected sign.

Although this study is multivariate, it is impossible to rule out the possibility that the results are to some extent due to selection, reverse causal links, or relationships excluded from the analysis. The data on entrepreneurship is still small and very recent to be able to convincingly test the hypotheses; therefore, the results presented in this paper must be considered as preliminary, but promising.

In terms of policy implications the results indicate that the removal of bureaucratic barriers to entrepreneurs could have large potential payoffs in terms of economic growth. Further it explains why high levels of entrepreneurship, as observed in many poor countries, are not automatically transformed into fast rates of economic growth. These results actually strengthen the case for entrepreneurship as a “development variable”. Many poor countries have very high rates of entrepreneurship but stagnant economic development. Based on a one-sided agency approach this fact becomes a theoretical anomaly requiring an ad hoc explanation. When including the bureaucracy in the analysis this theoretical anomaly, residual in statistical terms, is greatly reduced and theoretically understandable.

References

- Archer, Margaret Scotford. 1988. *Culture and agency : the place of culture in social theory*. Cambridge [Cambridgeshire] ; New York: Cambridge University Press.
- . 1995. *Realist social theory : the morphogenetic approach*. Cambridge ; New York: Cambridge University Press.
- Audretsch, David , and Roy Thurik. 2001. “Linking entrepreneurship to growth.” STI.
- Barro, Robert. 1996. “Health and economic growth.” Pan American Health Organization.
- . 1997. *Determinants of economic growth: a cross-country empirical study*. Cambridge, Mass. ; London: MIT.
- . 1998. “Human Capital and Growth in Cross-Country Regressions.” in “Can Education Foster Growth?”. Stockholm: The Economic Council of Sweden

- Barro, Robert , and Rachel McCleary. 2003. "Religion and economic growth across countries." *American Sociological Review*:760-781.
- Berggren, Niclas 2003. "The Benefits of Economic Freedom - A Survey." *The Independent Review* VIII:193-211.
- Bosma, Niels , and Rebecca Harding. 2006. *Global Entrepreneurship Monitor 2006*. London: London Business School.
- Coleman, James. 1988. "Social Capital in the Creation of Human Capital." *American Journal of Sociology*:95-120.
- Craib, Ian. 1992. *Modern social theory : from Parsons to Habermas*. New York: Harvester Wheatsheaf; St. Martin's Press.
- Doucouliafos, C. 2005. "Publication bias in the economic freedom and economic growth literature." *Journal of Economic Surveys* 19:367–388.
- Evans, Peter , and James Rauch. 1999. "Bureaucracy and Growth: A Cross-National Analysis of the Effects of Weberian State Structures on Economic Growth." *American Sociological Review* 64.
- Gartner, W., B. Bird, and J. Starr. 1992. "Acting As If: Differentiating Entrepreneurial from Organizational Behavior." *Entrepreneurship Theory and Practice*:13-31.
- Giddens, Anthony. 1984. *The constitution of society : outline of the theory of structuration*. Cambridge: Polity Press.
- Ginsburg, T. 2000. "Does Law Matter for Economic Development? Evidence From East Asia." *Law & Society Review* 34:829-856.
- Gnyawali, D. R., and D. S. Fogel. 1994. "Environments for Entrepreneurship Development: Key Dimensions and Research Implications." *Entrepreneurship: Theory and Practice* 18.
- Gwartney, James, and Robert Lawson. 2002. *Economic Freedom of the World: 2002 Annual Report*. Vancouver: Fraser Institute.
- Hair, Joseph. 1998. *Multivariate data analysis*. Upper Saddle River, N.J.: Prentice Hall.
- Heertje, A. 2004. "Schumpeter and methodological individualism." *Journal of Evolutionary Economics* 14:153-156.
- Herkenrath, Mark. 2002. "Quantitative Cross-National Analysis as a Research Tool in the Sociology of Developing Countries: A Critical Examination." *Current Sociology*:517-530.
- JamesGwartney, Robert Lawson, and Neil Emerick. 2003. *Economic Freedom of the World: 2003 Annual Report* Vancouver: Fraser Institute.
- Julien, Pierre-André. 1989. "The Entrepreneur and Economic Theory." *International*

Small Business Journal 7:29-38.

Kane, Tim , Kim Holmes, and Mary O'Grady. 2006. 2007 Index of Economic Freedom. Washington: The Heritage Foundation & The Wall Street Journal.

Knack, S., and P. Keefer. 1997. "Does social capital have an economic payoff? A cross-country investigation." *Quarterly Journal of Economics*:1252-1288.

Krueger, Alan , and Mikael Lindahl. 2001. "Education for Growth: Why and for Whom? ." *Journal of Economic Literature* 39:1101-1136.

Martin, Michael, and Lee C. McIntyre (Eds.). 1994. *Readings in the philosophy of social science*. Cambridge: MIT Press.

Minniti, Maria , William Bygrave, and Erkkö Autio. 2005. *Global Entrepreneurship Monitor 2005 Executive Report*: Babson College and London Business School.

North, Douglass C. 1990. *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press.

Platteau, J. P. 2001. *Institutions, Social Norms, and Economic Development*: Routledge.

Putnam, Robert , Robert Leonardi, and Raffaella Nanetti. 1993a. *Making democracy work: civic traditions in modern Italy*. Princeton, N.J: Princeton University Press.

Putnam, Robert, Robert Leonardi, and Raffaella Nanetti. 1993b. *Making democracy work : civic traditions in modern Italy*. Princeton, N.J: Princeton University Press.

Reynolds, Paul, William Bygrave, Erkkö Autio, and Michael Hay. 2002. *Global Entrepreneurship Monitor - 2002 summary report*: London Business school.

Reynolds, Paul, Michael Camp, William Bygrave, Erkkö Autio, and Michael Hay. 2001. *Global Entrepreneurship Monitor - 2001 summary report*. London: London Business school.

Rundqvist, Mikael. 1998. "Samhällets tvåsidighet: aktör-struktur i tre forskningsansatser program och tillämpningar." Pp. [14], 270 s. in *Göteborg studies in politics*, 57. Göteborg,.

Schumpeter, Joseph. 1934. *The theory of economic development : an inquiry into profits, capital, credit, interest, and the business cycle*. Cambridge: Harvard University Press.

Schumpeter, Joseph A. 2000. "Entrepreneurship as Innovation." Pp. 51-75 in *Entrepreneurship: A Social Science View*, edited by Richard Swedberg. Oxford Oxford University Press.

Shane, Scott 2003. *A general theory of entrepreneurship: the individual-opportunity nexus*. Northampton: E. Elgar.

Soto, Hernando de. 2000. *The mystery of capital : why capitalism triumphs in the West*

and fails everywhere else. New York: Basic Books.

—. 2002. *The other path : the economic answer to terrorism*. New York: BasicBooks.

Svensson, Fredrik. 2003. "Entreprenörskap och byråkrati - hindras kreativa företagare av reglerande myndigheter?" Pp. 47-66 in *Relationsbyggande för ekonomiska utveckling*, edited by Eskil Ekstedt & Lars-Erik Wolvén. Stockholm: Arbetslivsinstitutet.

Sztompka, Piotr. 1991. *Society in action : the theory of social becoming*. Cambridge: Polity.

Whiteley, P. F. 2000. "Economic Growth and Social Capital." *Political Studies* 48:443-466.

World Bank. 2006. *Doing Business in 2006 - Creating Jobs*. Washington, D.C.: The World Bank and the International Finance Corporation

Appendix 1

Description and source of used variables.

Term	Measure	Source reference
Economic development	Average annual GDP growth between 1990-2001	World Bank Development Indicators (WDI)
Level of economic development	GDP/Capita 1995 (U.S. dollars)	World Bank Development Indicators (WDI)
Entrepreneurship	Total Entrepreneurship Activity (TEA)	Global Entrepreneurship Monitor (GEM)
Bureaucracy	Bureaucratic regulation (1-5)	Heritage Foundation
Corruption	Corruption Perception Index	Transparency International
Economic freedom	Index of Economic Freedom	Heritage Foundation Index of Economic Freedom
Social capital	Can people in general be trusted (%)	World Values Surveys
Taxation	Taxation level (% of GDP)	World Bank Development Indicators (WDI) and OECD Revenue Statistics

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Are traditional Western ethical theories still relevant in a cross-cultural and entrepreneurial business world?

David A Robinson – Associate Professor of Entrepreneurship: Faculty of Business, Technology and Sustainable Development, Bond University, Australia.

Jieru Zhou – Associate Professor: ANTAI School of Management, Shanghai Jiao Tong University, Shanghai, China.

Introduction

Ethics is an area of business largely left to the imagination. Typically, managers are guided by the company code or culture, or at least have a person higher up the hierarchy that they can refer to when faced with a decision containing ethical dimensions. Entrepreneurial managers, being opportunistic and often working alone, may overlook or even ignore the ethical elements of business decisions.

Under circumstances of intense competition and the need for expediency, conflicting priorities arise and the entrepreneur may be faced with certain dilemmas. In seeking to resolve these, entrepreneurs must usually rely on their own judgment to determine ‘what is right’.

Since moral choices have a significant impact on business decisions, and given the fact that entrepreneurs usually make those choices without requesting advice from people well-versed in ethics, it is important to know whether or not they are likely to have ethical bias or particular orientation.

Traditional Western ethical theories recognise three bases for ethical choice, namely virtues, rules and/or consequences. This paper assesses the ethical orientations of managers with entrepreneurial intentions by means of a questionnaire administered to Master of Business Administration candidates in China and Australia, who either have or do not have the intention to become entrepreneurs.

The research problem is two-fold, namely:

To determine whether entrepreneurially-inclined managers are more oriented than their corporate counterparts toward any of the three ethical theories when making decisions.

To determine whether there are any differences in ethical orientation between Chinese and Australian entrepreneurially-inclined managers.

The entrepreneurially-inclined manager is defined as one who is an established manager and who has entrepreneurial inclinations, whether already realised or not. This means either that they are currently managing their own business or considering entrepreneurship as a future endeavour. Either way, they are self-proclaimed entrepreneurs in the psychological and/or behavioural sense of the term. Likewise, those designating themselves as 'not entrepreneurially-inclined' are either working as managers in corporate businesses and not intending to become self-employed or are currently engaged in Not-for-Profit undertakings as a long term career choice.

As business-related responsibilities typically remain his/her priority at all times, there is usually little time for any matters that fall outside of the realm of business ownership and management. This usually results in the entrepreneur being totally absorbed by work-related issues, which makes it difficult to discern where business ends and other aspects of his/her life fit in.

As entrepreneurs continuously pursue opportunity (Stevenson 1983), they may be faced with opportunities where they are compelled to make choices between alternatives. They typically face aggressive competition in the marketplace and extra-ordinary financial risks. Sometimes none of the choices appear appropriate to them, or more than one appears equally desirable. In addition, they are usually unable or unwilling to consult with others about the decision, so they must rely on their own judgment to determine 'what is right'.

It is hypothesised that entrepreneurially-inclined managers will tend to be more biased toward consequentialism (as opposed to deontology and virtues) than their corporate counterparts and that there are differences in ethical orientation between Chinese and Australian managers with entrepreneurial intentions.

Literature Review

Research that addresses entrepreneurs' motivations in a direct manner clearly shows that entrepreneurs are not just single-minded profit maximizers who appropriate the value created by other people's work, alluded to in economic theory (Hebert & Link, 1988: 48). When asked about their start-up motivations they state a range of economic and non-economic driving forces. The top two motivators tend to be the desire to be one's own boss, and the compulsion to bring an idea they may have nurtured for some time to reality, or some variation on those themes (e.g. Birley & Westhead, 1994; Vesalainen & Pikhala, 1999). When economic motivation occasionally takes primacy, it is economic necessity rather than the dream to become rich that is the primary motivator for starting

a business (Solymossy, 1997).

Wiklund, Davidsson & Delmar (2003) in their longitudinal study of ongoing small businesses demonstrated that expectations concerning the effect of business growth on employees' well-being are far more important than the effect of growth on the entrepreneur's income stream alone, which indicates that non-economic concerns can influence entrepreneurial decision making. Reviewing a range of research studies, Sapienza, Korsgaard & Forbes (2003) specifically discuss entrepreneurs' characteristic self-determination as an important enough motivator to overshadow even potential financial gains. Delmar (2000), while conceding that there are some generalisations to be made about entrepreneurs, concludes that there is no typical profile.

According to the literature, entrepreneurs appear to be as heterogeneous as any other group, in the psychological, demographic and socio-economic sense. Thus, we might expect that they are not inherently a special breed as regards ethical issues either. Although Bucar, Glas and Hisrich (2003), in one of the few studies devoted to entrepreneurial ethics, found differences between entrepreneurs and corporate managers in their attitudes towards behaviours that might be seen as unethical, those results are better explained by situational characteristics rather than innate differences of character between entrepreneurs and non-entrepreneurs.

I would now like to touch on the most salient aspects of Western ethical theory, as well as the Chinese perspective, before venturing to describe the domain of entrepreneurial ethics.

When one asks the question "What is the right thing to do?" it usually means he/she is searching for the most appropriate moral action. In our ever-present inner search for 'right', we are consciously or unconsciously engaging in ethics, which in its most basic form is simply 'the philosophical reflection on moral issues' (Robinson D, 2002).

But if morality changes over time, with societal norms and regulatory statutes, then how can one know for sure what is moral? Certain minimum conditions for morality have been defined (Rachels 1993; Boylan 2000) and are included here as a foundation for identifying what aspects of entrepreneurs' business decisions might give rise to an ethical dilemma:

Morality as responsibility, i.e. acting in accordance with other people's concerns, rights and expectations. That means not only refraining from doing things that cause harm to others, but also actively pursuing their welfare – it implies the imperative to do as we say and believe.

Morality as concern for others, i.e. understanding how others experience a loss, for example, which compels us to not want to impose a loss on another.

Morality as reason, i.e. they should be justifiable according to an objective set of criteria

Morality as consistency, i.e. similar cases are treated similarly without double standards.

Morality as universality, i.e. the same conditions must be applied to all concerned.

The above five form a convenient checklist for entrepreneurs who wish to ensure that

their decisions are ethical. Problems occur when one or more of the above conditions do not appear to be fulfilled by an anticipated business decision. Entrepreneurs need to choose the best under the circumstances. So how do entrepreneurs make the best choice?

One way to do so is to seek out an applicable rule, norm, value or example to follow, then he/she seeks to apply normative ethics. Normative ethics is the branch of philosophy concerned with moral obligation and intrinsic value in the actions and character of human beings (Boylan 2000). Two main branches of western normative ethics are virtue ethics and rule-based ethics.

Virtue ethics

A virtue is a relatively stable character aspect that disposes a person to act in a benevolent way. To describe something as a relatively stable character aspect is the same as saying that it has become a habit. Virtue ethics therefore focuses on the formation of one's character to equip one for good citizenship in an organized community, in the belief that a community made up of people of good character would be a good community. In Aristotelian times, the culture was propagated that morality should be formed as part of one's character (Negri 1988), such that it should then be unnecessary to impose any particular theory of morality on ourselves or others, but we would be morally equipped to act always in accordance with our personal values, which would be trustworthy because they would have been formed around a right moral value system. There is sufficient evidence of crime and corruption all around us in this day and age to show that we do need rules and laws to guide and direct people's behaviours if we are to enjoy a fair and just society. Perhaps it is precisely because of the multiplicity of rules and laws that ethics per se is today a seldom discussed topic, which seems only to surface when rules or laws are indeed transgressed and the offending parties are found to be 'unethical'. Ethics should not be about judging conduct after the event. More appropriately, ethics should be the little voice inside everyone, calling them to reason and pre-meditated accountability for their actions.

Virtue ethics cannot provide absolute guidelines to individuals and communities, because of cultural differences and the process of adaptation (Negri 1998). Although some hypothetical concept of a virtuous person, akin to the legal concept of the reasonable man, may be useful in assessing the moral-appropriateness of human behaviours, where no absolute measure exists, the entrepreneur would still require a comprehensive description of what constitutes a virtuous person, and it would seem improbable that such a description could cover every eventuality. As virtue ethics emphasizes the roles of character and reason, perhaps all we need describe is what it means to be reasonable and of good character, but again the application of those ideals would be subject to the entrepreneur's own interpretation. The lack of clear guidelines gave rise to more prescriptive forms of normative ethics, referred to as rule-based ethics.

Rule-based ethics

Rule-based ethics seeks to evaluate moral considerations against a set of rules that constitute a moral theory, which determines what is regarded as acceptable behaviour. Two rules may be applied, namely:

Consequentialism, under which actions should be judged according to their consequences, and Deontology – under which the opposing view is assumed, i.e. that the judgement of rightness or wrongness of any action is not dependent on consequences, but rather on the intrinsic goodness of the action, in and of itself.

Consequentialism

The most popular approach to consequentialism is utilitarianism – the belief that “an action is morally right when that action produces more total utility for the group as a consequence than any other alternative does” (Boylan 2000: 66). The goal of utilitarianism is often stated as the greatest good for the greatest number (Boylan, 2000; Rachels, 1993; Rossouw, 2002). Weiss (2003) extends the utilitarian concept to business by going beyond the traditional, idealistic definition of ‘greatest good for the greatest number’, introducing the following tenet (Weiss, 2003: 80): An action is morally right if “the (immediate and future) net benefits over costs are greatest for all affected”. Such an approach to morality is similar to the cost-benefit analysis that is commonly used in business decision-making. Weiss thereby attempts to make the utilitarian label fit into a pragmatic business context, but the weighing of benefits against costs cannot qualify as a normative ethical approach to decision making unless it simultaneously complies with all of the conditions for morality. Since the cost-benefit approach can be utilized quite independently of any ethical conscience, the entrepreneur is still left without any real method of ensuring ethical correctness.

Consequentialist ethics is also at the foundation of hedonism, where priority is given to the pursuit of immediate personal pleasure. This has negative implications for the field of entrepreneurship, where, for example, robbing a bank might be an acceptable action (from a hedonist’s perspective) but immediate personal pleasure is unlikely to lead to long-term happiness (eg. the robber becomes a fugitive or a prisoner). An astute risk taker might weigh-up the probability of being caught and decide to go ahead and rob the bank anyway. So, a form of consequentialist reasoning is found in ethical egoism, where conflict of interest between what is good for oneself and what is good for society is resolved by the individual simply placing his own happiness first. Egoism cannot be propagated as a universal moral principle, as it contradicts many of the minimum conditions for morality, such as responsibility and concern for others. Alternatively, altruists regard concern for others as more important than concern for themselves. Based on the above, it seems important to know whether or not entrepreneurs tend to rely on consequentialist-type reasoning when faced with ethical decisions.

Deontology

Deontology, by contrast, focuses purely on the intrinsic rightness of an action, without regard for its consequences. Deontologists believe in the absolute necessity of duty, irrespective of the rewards or punishments that may follow. So, for example, the deontologist would not tell a lie, even if by so doing he/she might save the lives of many people. Immanuel Kant (1724-1804) insisted that two concepts, in particular, are necessary for consistent moral behaviour, namely human reasoning and goodwill. He defined goodwill as “the will that obeys the universal moral law” (Rossouw, 2002: 51). As some duties are absolute, e.g. the duty to tell the truth, others are not, e.g. the duty to exercise, there are two forms of imperative - the categorical imperative is a universal moral obligation that is not dependent on anything, and the hypothetical imperative is a conditional moral obligation. Kant’s Categorical Imperative requires people to always act in such a way that they can, at the same time, wish that everyone would act in that way. For deontologists, moral actions are always rational actions, so the primary value of these imperatives is to provide a way to reason with the question of, “What is right?” In practice, this can be achieved by applying the maxim: “If everyone did this, would it still be okay?” Deontology is not unlike virtue ethics, in the sense that as a moral theory its goal is for everyone to act virtuously at all times. The main difference is that it seeks to prescribe moral duties by promoting an imperative to act morally, assuming that people will not, of themselves, always act in virtuous ways. It supports most of the minimum conditions for morality, in particular responsibility, concern for others, consistency, universality, and reason. Entrepreneurs, however, resides in a world where they obtain their highest value from being different from others, i.e they seek to be the first, the best, the quickest, the cheapest, the most innovative, so it is unreasonable to expect them to base their decisions on what everyone else would do.

With the advent of a ‘global village’ and the resultant exposure to different cultures, people are now realizing that “what is right in one culture is not necessarily right in someone else’s” (Rossouw, 2002: 66). This has given rise to cultural relativism. Adapting to the cultural mores of a foreign country with which one is attempting to conduct business was once considered a moral duty but certain countries have recently declared it a questionable practice. How then can cultures ever agree on what is ethical?

The Chinese perspective

Business Ethics in China is deeply affected by Chinese traditional culture, especially by Confucianism. Confucianism advocates a number of important values that underpin human relations and interactions, but its substance is centred on four unique yet inter-related concepts (Tu Wei-ming, 1995). The first of these is the central value of goodwill (ren), which identified the capacity of the human person to extend generosity and compassion to all of humanity. It promotes reflection on one’s allegiances and maintains that the ultimate allegiance is not to one’s state, but to the human community through goodwill. The second is protocol (li), which means that every person should respect and follow the rules of proper conduct. These were the unwritten laws and regulations

that governed thought and action in society and regulated human behaviour and desire. The third is filial piety (hsiao) which teaches people to love their family first and then to extend this love and respect to the rest of society. The fourth is the doctrine of the mean (zhong yong) that teaches an appreciation of central virtues that achieve the necessary balance between extremes. It is believed that if people adhere to the doctrine of the mean they achieve the desired harmonious balance, which is considered essential for a harmonious society.

In the Chinese business system, these classic perspectives affect Chinese entrepreneurs' thinking when they make decisions. Thus, their search for optimum solutions must satisfy not only economic interests, but also those aforementioned societal principles. These principles become manifest as a desire to respect the mean, regard humanity as the basic element, and concern for honesty, morality, and harmony. In addition, business leaders take upon themselves the burden of 'reflourishing' China through their industry as they consider the economic well-being of their country to be their responsibility (Qizhong Zhu, Chuanqing Wu, 1996). They also hope that their companies have constant, consistent long-term development and sustainability as a result of applying these universal principles.

In addition to the above, Guanxi takes on a special role in Chinese culture. Guanxi can be defined as a principle encompassing "pre-existing relationships of classmates, people from the same native-place, relatives, superiors and subordinates in the same workplace, and so forth" (Y.H. Wong, 2000). Since these relationships define how members of society behave in relation to each other, an appreciation of guanxi is essential to understanding Chinese business behavior. Although guanxi is based on a societal system that arguably has its origins in Confucian thought, still today, guanxi describes a an invisible network of personal relationships that can and do invariably provide the most efficient way of getting anything done.

There are five guanxis, namely:

emperor-subject,

father-son,

husband-wife,

elder-younger brother and

friend-friend.

This hierarchy of relationships, not unlike W. D. Ross's (1930) prima facie duties, a 20th Century adaptation of deontological responsibility theory, dictates the appropriate social status and responsibility of a person in the society (Pablos, 2001). From Chenting Su and James E. Littlefield's point of view (2001), there are two types of guanxi prevalent in mainland China, namely favor-seeking guanxi that is culturally rooted, and rent-seeking guanxi that is institutionally defined. Notwithstanding this modern-day distinction, the fostering and nurturing of personal relationships is a fundamentally

important social behavior in the life of the Chinese people (Leiduo, 2005).

The reality might be that in the Chinese business system there is no single decision-maker. Rather, it may be the network itself, i.e. *guanxi*, that is the ultimate, collective 'decision maker' (Ford, 1997). Thus when Chinese entrepreneurs make any decisions, and more especially a decision containing an ethical component, they will undoubtedly think about whether it will profit their own social relationships. It follows that Chinese people prefer to use their relatives and the ones with whom they are already familiar. This is also the origin of Chinese *renqing* (translated 'favor') and 'kinship culture' (Kingrui Zhu, 2005). So to Chinese entrepreneurs, *guanxi* is another important influencing factor in the decision making process. The underlying belief is that good *guanxi* will certainly bestow a company with rich profit, whereas without *guanxi*, or with a bad *guanxi*, entrepreneurs would be greatly limited in their ability to accomplish anything.

Toward an entrepreneurial ethic

As entrepreneurs are the primary decision makers in their organizations, they are likely to make a larger number of significant decisions than the average person. Moreover, they cannot escape ethical dilemmas by deferring to a supervisor, a job description, or by claiming that a decision was outside of their control and forced their behaviour in a direction that clashed with their own or generally accepted ethical standards (cf. Cialdini, 1988, on the effects of 'Authority'). In addition, as the key decision makers they are likely to frequently face complex and novel decisions, involving tradeoffs with ethical implications and for which no satisfactory, predefined solutions exist. This realisation renders ethical issues very pertinent to entrepreneurs. Teal and Carrol (1999) found that entrepreneurs exhibit moral reasoning skills on a higher level than either middle-level managers or the general population. This appears logical considering that entrepreneurs have to assume responsibility for difficult decisions more often than their corporate counterparts.

Judging from the above review it is clear that the situation entrepreneurs find themselves in differs markedly from that of most other people, and this in itself renders them a particularly interesting group to study from an ethics point of view. It is therefore important to discover whether or not the group of people we delineate as entrepreneurially-inclined have any natural, conscious or unconscious, bias toward one or other ethical orientation.

Methodology

A questionnaire – Ethics in Business – was developed, consisting of thirty-seven questions. Of these, four had definitive short answers and were based on a mini case designed to examine respondents' attitudes towards ethical considerations in sales, inter-personal matters, administration and company culture, while the remaining thirty-three required responses based on a dichotomous Likert scale consisting of five options ranging from 'strongly disagree' (SD) to 'strongly agree' (SA) with a neutral point (N)

between ‘agree’ (A) and ‘disagree’ (D). Options were scrambled to negate repetition and monotony. An additional feature of the questionnaire construction was that some questions contained response options where the two sides of the scale were simple opposites, thus signifying degree of acceptance or rejection of the relevant ethical theoretical basis, while others were set up to force a trade-off between two opposing theories. There were an equal number of options for each of the three theories, both as acceptance/rejection questions and as trade-off questions, thus negating instrument bias (see Appendix 1).

The Ethics in Business questionnaire was administered to business managers in Australia and China. These included mature age MBA students with significant managerial experience, who consider themselves entrepreneurially-inclined, some established entrepreneurs as well as a sample of corporate managers of for-profit companies and managers of not-for-profit companies. Within the sample are participants from MBA schools in China and Australia. Although the Australian group contains students from China or other Asian countries, and both business school groups contain a small number of students from Europe, the fact that identification was not compulsory has meant that it was impossible to separate those questionnaires, thus limiting the analysis, yet providing a higher response rate in the aggregate.

In analysing responses, points were allocated according to the degree of acceptance/rejection (positive vs. negative points) or the trade off between opposing theories (both positive). Thus, three points were allocated to ‘strongly agree (SA)’ or ‘strongly disagree (SD)’ responses and one point to agree/disagree (A)/(D) responses. Points were tallied (with positives and negatives netted, where applicable) and aggregated per participant and then averaged for the group, showing clearly the average nett preference of each group for each particular theory. Results were tabulated and then analysed by means of Chi Square statistics (Mathbeans Project, 1999) to test hypotheses.

Findings

From a total of 183 participants, 161 were categorized as having entrepreneurial inclination. The remaining 22, all from Australia, were categorized as ‘corporate’ and tallied separately. The 161 entrepreneurially-inclined managers were comprised as follows: China 131, Australia 30.

Responses were summarized and are described in Table 1:

Table 1: Mean Aggregated Responses by Cultural and Participant Grouping

Group	Virtue	Conseq.	Deontol.	Utilitarian	Altruism	Egoism
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China IMBA Group 1 (54)	11.3	2.0	6.4	2.1	1.9	- 0.9
China IMBA Group 2 (42)	10.2	4.2	7.4	1.5	1.2	0.5
China Entrepreneur/ Manager Group (35)	10.5	4.8	9.4	3.1	0.3	0.3
Australia MBA Group (30)	23.0	- 0.5	4.4	1.7	1.3	- 0.5
Entrepreneur Sub-total (161)	55.0	10.5	27.6	8.4	4.7	-0.6
%	59.1%	11.3%	29.6%	64.1%	35.9%	0.0%
Australia Cor- porate Group (10)	19.2	1.4	4.5	2.3	2.1	0.2
Australia Not-for Profit Group (12)	16.2	0.0	4.0	2.0	2.0	0.0
Corporate Sub-total (22)	35.4	1.4	8.5	4.3	4.1	0.2
%	78.1%	3.1%	18.%	50.0%	47.7%	2.3%
Total (188)	90.4	11.9	36.1	12.7	8.8	-0.4
%	65.3%	8.6%	26.1%	59.1%	40.9%	0.0%

It can be seen from the table that, in general, virtue ethics enjoyed the most support (65.3%) with deontology second (26.1%) and consequentialism least (8.6%). When forced to evaluate consequences, respondents rated utilitarianism (59.1%) above altruism (40.9%) and placed least importance on egoism (0.0%). When only the entrepreneurially-inclined managers are considered, the picture remains similar:

Virtues 59.1%, Deontology 29.6% , Consequentialism 11.3%

Utilitarianism 64.1%, Altruism 35.9%, Egoism 0.0%

Chi Square analyses were conducted to test the following effects and hypotheses:

1. Whether or not there is any significant difference between entrepreneurial and corporate managers with respect to ethical orientation. The Chi Square statistic was 6.01 with 2 degrees of freedom. As this is greater than 5.99, the null hypothesis can be rejected with a 0.05 error probability, or 95% confidence level. It is therefore concluded that there is a significant difference in ethical orientation between entrepreneurially-inclined and corporate managers. The corresponding contingency table is shown in Appendix 2.

2. Whether or not there is any significant difference between Chinese and Australian entrepreneurially-inclined managers in the distribution of their ethical orientations. The Chi Square statistic was 11.5 with 2 degrees of freedom. As this is greater than 9.21, the null hypothesis can be rejected with only a 0.01 error probability, or 99% confidence level. It is therefore concluded that there is a significant difference between Chinese and Australian entrepreneurially-inclined managers in the distribution of their ethical orientations. The corresponding contingency table is shown in Appendix 3.

Four things become evident from these results:

1. The aggregated responses definitely did not favour consequentialism above virtue ethics or deontology. All cultural groups were oriented mostly toward virtues, then deontology, and placed consequentialism last. (Similarly, all cultural groups preferred utilitarianism above altruism with egoism last).

2. A significant difference in ethical orientation was found between the two cultural groups.

3. Virtues was the most preferred way of deciding ethical issues in business among entrepreneurially-inclined managers.

4. There are significant variations between the aggregated responses of the Chinese and Australian managers.

As aggregated results ignore the sensitivities of individual respondents, a more complete

picture is presented when one looks at the range of orientation, as shown in Table 2:

Table 2: Range of Responses by Cultural Grouping

Table 2: Range of Responses by Cultural Grouping

Group	Virtue		Conseq.		Deontol.		Utilitarian		Altruism		Egoism	
	high	low	high	low	high	low	high	low	high	low	high	low
China MBA Group	30	-4	15	-7	13	-2	9	-3	9	-1	3	-5
Australia MBA Group	34	11	6	-8	22	-8	7	-1	5	-2	2	-3
Australia Corporate Group	39	5	10	-16	20	-6	9	-3	9	-3	4	-3
China Entrepreneur Group	25	-4	20	-10	29	-3	9	-2	5	-4	7	-4

Table 2 again confirms a high acceptance of virtue ethics. More strikingly, though, it illustrates a range of rejection of both deontology and consequentialism, where low scores are negative for all groups.

Limitations

The validity of this research is limited by the following factors:

The possible cross-over of values and ethical orientation between cultures, especially where some of the Australian participants may be of Asian origin;

The use of MBA students pursuing entrepreneurship studies and relying on their own perception of themselves as ‘entrepreneurially-inclined’ as the main criterion for inclusion in the study. This is especially relevant to the China group, where the term ‘entrepreneurially-inclined’ may have been interpreted differently from the established meaning in English first language countries;

The possibility of respondents choosing answers they perceived as ‘correct’ cannot be discounted, even though the instructions stated clearly that there were no right or wrong answers;

This study has only considered the three major ethical theoretical bases, namely virtues, deontology and consequentialism. Since entrepreneurs inhabit a world of opportunity, which often requires expedient action, it follows that there may be little time in their day to day lives for reflective ethical consideration, which raises the possibility that the indications of ethical orientation found in this study may not carry through to the real worlds of respondents;

In the light of hypothesis 2 being confidently rejected, it is possible that the rejection of hypothesis 1 could be influenced by the fact that the corporate group were all Australian and the entrepreneurially-inclined group were mainly Chinese;

Finally, even though the hypotheses tested returned definitive results, the reliability of the research is limited by the fact that the sample size was small. Caution should therefore be exercised if these findings are to be generalised and further studies should be undertaken to confirm their reliability.

Conclusions

There is little doubt that ethical reasoning remains a complex mosaic of virtue ethics, deontology, and consequentialism (Robinson D, 2002), and as such any attempt to typecast entrepreneurs or even define an entrepreneurial ethic may indeed be futile. Nevertheless, this study has identified that the way entrepreneurs decide what is ethically appropriate is not, as sometimes believed, based on selfish, egoistic or even consequentialist bias, in the main. The findings that entrepreneurs' chief orientation is to virtues appear striking and counter-intuitive, and suggest the existence of a more sensitive, searching, inner soul beneath the apparent hard-nosed, business-oriented, public image of the typical entrepreneur, as current parallel research has suggested (Robinson, Davidsson, van der Mescht and Court, 2006).

One striking difference between the entrepreneur and others is that the areas of their lives are not easily delineated. Their dilemmas therefore extend to personal, business, and family matters, and these are more likely to be intermingled than their corporate counterparts. Since moral choices are unavoidable in business, we would have to agree with Megone's (2002: 28) assertion that the real challenge, where entrepreneurs are concerned, is "to make the ethical component of business decision-making explicit so as to make it better". Given the strong indication that entrepreneurs, like their corporate counterparts, regard virtue ethics highly, future research could be focused on ways to ensure they are equipped to make business decisions without violating any personal principle or value. In this regard, the Business Ethics Synergy Star (BESS) (Robinson et al, 2006) will no doubt prove a valuable tool.

We now return to the main question and title of this paper - Are traditional Western ethical theories still relevant in a cross-cultural and entrepreneurial business world? This research has shown that there are significant differences between two cultural groups, namely Australian and Chinese entrepreneurially-inclined managers. Furthermore, it has found significant differences between managers believing themselves to be

entrepreneurial and those not. With the increasing occurrence of cross-cultural interactions in business, coupled with an unprecedented acceleration in the rate at which new businesses are brought into existence, it is probable that the nature of decision-making will continue to change significantly and rapidly. There is thus an urgent need for the establishment of a modern-day ethic that accommodates both Western ethical theories and the traditional Chinese ethics, including Guanxi, which do not appear in principle to be at conflict with each other. While it is unlikely that a single, universal business ethic will ever prevail, and probably undesirable that it ever should (as any absolutistic system would limit creativity and all but erase valuable cultural heritages), the challenge remains to make ethical decisions and conduct business in ways that are considered morally acceptable to all parties concerned.

References

- Birley, S. and P. Westhead. 1994. A taxonomy of Business Start-up Reasons and Their Impact On Firm Growth and Size. *Journal of Business Venturing* 9: 7–31.
- Boylan, M. 2000. *Basic Ethics*. New Jersey: Prentice Hall
- Bucar, B. Glas, M. & Hisrich, R.D. 2003. Ethics and entrepreneurs: an international comparative study. *Journal of Business Venturing*, 18, 261-281.
- Chenting Su and Littlefield, J. E. 2001 “Enter Guanxi: a business ethical dilemma in mainland China?”, *Journal of Business Ethics* 33: 199-201.
- Cialdini, R.B. 1988. *Influence. Science and Practice* (2nd Ed.). New York: HarperCollins.
- Delmar, F. (2000). The psychology of the entrepreneur. In S. Carter & D. Jones-Evans (Eds.), *Enterprise & Small Business: Principles, Practice and Policy*. (pp. 132-154).
- Ford, John B. 1997. Moral Judgement and Market Negotiations: A Comparison of Chinese and American Managers. *Journal of International Marketing*.5/2: 57-76.
- Harlow: Financial Times.
- Hebert, R. F. & Link, A. N. 1988 *The Entrepreneur. Mainstream Reviews and radical Critiques* (2nd edition). New York: Praeger
- Kingrui Zhu. 2005. Kinship Model Analysis in Building Up Chinese Business Ethics, *Ethic Research*, (Vol.4, pp45-48)
- LeiDuo. 2005. Guanxi and Its Influence On Chinese Business Practices, *Harvard China Review*, (spring 2005 □pp81-83)
- Mathbeans Project. 1999. National Science Foundation (<http://math.hws.edu/javamath/ryan/ChiSquare.html>)
- Megone, C. 2002. Two Aristotelian approaches to business ethics.
- Negri (ed). 1998. *Aristotle - Nicomachean Ethics*. Toronto: General Publishing Co.

- Qizhong Zhu and Chuanqing Wu. 1996. Confucian Ethics and Chinese Entrepreneurship, Transaction of Wuhan Communication and Science University. Vol.2: 52-57
- Rachels, J. 1993. The Elements of Moral Philosophy. New York: McGraw-Hill
- Robinson, D. A. 2002. A phenomenological study of how South African entrepreneurs experience and deal with ethical dilemmas. PhD thesis. Grahamstown: Rhodes University
- Robinson, D. A. 2005. Resolving dilemmas in closely-held businesses. The International Journal of Coaching in Organizations. (Vol 3, Issue 2. pp 22-26). Illinois, USA: Professional Coaching Publications Inc.
- Robinson, D. A., Davidsson, P., van der Mescht, H. and Court, P. 2006. How entrepreneurs deal with ethical challenges – an application of the Business Ethics Synergy Star (BESS). Journal of Business Ethics. Available 15 November, 2006 online: <http://dx.doi.org/10.1007/s10551-006-9148-8>
- Robinson, S. J. (eds). 2002. Case Studies in Business Ethics. London: Routledge
- Ross, W. D. 1930. The Right and the Good. Oxford: Clarendon Press.
- Rossouw, G. J. 2002. Business Ethics in Africa. Cape Town: Oxford University Press
- Sapienza, H. J., Korsgaard, M. A., & Forbes, D. P. (2003). The self-determination motive and entrepreneurs' choice of financing. In J. Katz & D. Shepherd (Eds.), Cognitive Approaches to Entrepreneurship Research (Vol. 6, pp. 107-140). Oxford, UK: Elsevier/JAI Press.
- Solyomossy, E. (1997). Push/Pull motivation: Does it matter in venture performance? In Reynolds, P.D. et al (Eds.): Frontiers of Entrepreneurship Research 1997. Wellesley, MA.: Babson College.
- Steidlmeier, P. 1997. Business Ethics and Politics In China, Business Ethics Quarterly, Vol.7: 131-143.
- Stevenson, H. H. (1983). A perspective on entrepreneurship. Harvard Business School Case 384-131.
- Teal, E.J. & Carroll, A.B. (1999). Moral reasoning skills: are entrepreneurs different? Journal of Business Ethics, 19, 229-240.
- Tu, Wei-ming. 1995. Is Confucianism part of the Capitalist Ethic? On Moral Business by Max C.Stackhouse, et.al. Grand Rapids: MI:William B.Eerdmans Publishing, 409-411
- Vesalainen, J. & Pikhala, T. (1999). Motivation structure and entrepreneurial intentions. In Reynolds, P.D. et al (Eds.): Frontiers of Entrepreneurship Research 1999. Wellesley, MA.: Babson College.
- Weiss, J. W. (2003). Business Ethics – A Stakeholder and Issues Management Approach.

Mason, Ohio: Thomson, South-Western

Wiklund, J., Davidsson, P. & Delmar, F. (2003). Expected consequences of growth and their effect on growth willingness in different samples of small firms. *Entrepreneurship Theory & Practice*, 27 (Spring), 247-269.

Wong, Y. H. and Tam, Jackie L.M. 2000. Mapping relationships in China: guanxi dynamic approach. *Journal of Business & Industrial Marketing*, Vol. 15 NO. 1: 57-69.

Yaohong Guo. (2004). Discussing Business Culture Construction of Chinese Corporation and its relationship with Confucian, *SCI/TECH Information Development & Economy*(Vol.14, pp257-258)

Ying Hong. (2001). The practice of business ethics in China: we need a parent, *Business Ethics: A European Review*, (Vol.10 pp87-93)

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Innovation Center: A Climate for Attracting and Developing Creativity

Mohammad Saleh Owlia

Associate Professor of Yazd University and President of Yazd Science and Technology Park, Iran
owliams@ystp.ac.ir

Shahram Shookuhi

ICT Incubator Manager of Yazd Science and Technology Park, Iran
shookuhi@ystp.ac.ir

Esfandiar Ekhtiyari

Assistant Professor of Yazd University and Vice President of Yazd Science and Technology Park, Iran
ekhtiyarie@ystp.ac.ir

Abstract

Creativity has been defined as the ability to make or bring into existence something new. To prevent failure of innovative creativity, it is necessary to develop a system to lead creativity into innovation. Science and technology parks can play a supportive role by providing an environment in which creative individuals receive necessary services to make novel innovations. It is expected that in this synergic environment, the innovations will also find their way to market through the establishment or involvement in technology companies.

This paper reports on the development of Innovation Center in Yazd Science & Technology Park (YSTP). Based on theories of creativity and innovation, a supportive structure model was designed. The required services to foster the innovative creativity atmosphere were identified. The designed model was implemented in the Park and the preliminary results show considerable success.

Introduction

The concept of creativity is being increasingly recognized as having its “social side”. Creativity can be interpreted as an interaction between an individual and the immediate socio-cultural context, therefore being an interpersonal phenomenon [1]. The beneficial or detrimental aspects of social facilitation of creativity are situational, but it seems clear that the presence and behavior of others is having an effect on creativity and its benefits. So definition of creativity should be based on the context in which it is flourished. Creativity has been defined as the ability to make something new, whether a new solution to a problem, a new method or device, or a new artistic objects or form. Creativity can be recognized as a combination of Idea and Action whereas innovation shows the combination of creativity and commercialization of product [2].

EU definition of innovation states that Technological product and process (TPP) innovations comprise implemented technologically new products and processes and significant technological improvements in products and processes. A TPP innovation has been implemented if it has been introduced on the market (product innovation) or used within a production process (process innovation). TPP innovations involve a series of scientific, technological, organizational, financial and commercial activities. The TPP innovating firm is one that has implemented technologically new or significantly technologically improved products or processes during the period under review.

In this paper a structure is proposed to foster creativity and innovation among creative individuals or teams. Supportive structure’s concept was based on the theories of creativity and innovation. This supportive structure provides unique opportunity for young creative innovators and enables them to develop their ideas in one hand and help SMEs to access creative innovators on the other hand[3].

If supporting Hi-Tech SMEs are known as macro scale duties of STPs, supporting creativity and innovation among individuals and teams can be considered as the micro scales duties. Following are the main activities that STPs can do to provide an innovative environment [4]:

enhance ability to commercialize and make social use of our scientific, technological and creative ideas;

contribute to political, technological, environmental, health and social priorities;

build on the economic importance of creative industries and service sectors;

extend work patterns to account for an ageing society;

foster a greater public awareness of the importance of scientific and technological change;

invest in long term benefits of cross-disciplinary educational activity;

make more efficient use of material resources and human capital; and

Capitalize on forms of knowledge that meet modern consumer demands for functional and attractive goods and services.

Basic Concepts

Regarding the definition of creativity, different viewpoints can be found in the literature [1, 2, 4]:

John Haefele (CEO and entrepreneur): Creativity is ability to make new combinations of social worth

Carl Rogers (psychologist and writer): Creativity is emergence of a novel, relational product, growing out of the uniqueness of the individual.

Henry Miller (writer): Creativity is occurrence of a composition which is both new and valuable.

Newell, Simon, & Shaw (Team of logic theorists): Creativity is a special class of problem solving characterized by novelty

H.H.Fox (scientist): Creativity is any thinking process in which original patterns are formed and expressed

E.Paul Torrance (Educator, Academic, Creativity investigator): Creativity is Fluency , flexibility, originality, and sometimes elaboration

Rollo May (writer, philosopher): Creativity is the process of bringing something new into being...

Roger von Ouch: Creative thinking involves imagining familiar things in a new light, digging below the surface to find previously undetected patterns, and finding connections among unrelated phenomena

Carnevale, Gainer, Meltzer (innovation Interpreter): Creativity is ability to use different modes of thought to generate new and dynamic ideas and solutions.

In general and in accordance with all of the definitions, creativity has been found to fall into two preferential categories [6]:

Adaptive creativity, which “involves taking an existing system and making that system better.” Efforts at continuous improvement fall under this category. For instance, adaptive creativity might involve studying an invoicing system, identifying what is wrong with that system, and fixing it.

Innovative creativity, in which something new is created. In the case of the invoicing system, for instance, “someone who is more inclined toward innovative creativity would not try to correct the system. Rather, he or she would throw out the system and create a new one”. The concept that is considered in most of creativity studies is innovative creativity.

To provide an environment that encourages innovative creativity, it is necessary to develop a system. This system is recognized as processes which form creation demand that unique ideas find inviting homes. Ideas must seek development, production, refinement before they reach fruition and manifestation and for others to see their beauty or their worth. This process takes time and energy as creators become consumed with the tasks of taking ideas and making them visible, audible or usable. Adjacent

to a focus on the creative and innovative individuals, a group or team focus has been established in research and practice. [2]. Therefore supporting creativity and innovation means providing support for individual and team efforts in a systematic scheme.

According to a study [7], systematic creativity is constructed from 5 levels, each level having its own characteristics. By fostering individuals' creativity, their creativity level will go to higher levels. The first three levels of creativity can be attained by anyone who is motivated and who has persistence enough to see projects and ideas through. The last two levels may be unattainable to all but those who are highly gifted creatively, or those who are naturally creative geniuses:

1. Primitive and intuitive expression: This first level of creativity incorporates the primitive and intuitive expression found in children and in adults who have not been trained in art. There is an innocent quality to primitive art, but also directness and sensitivity. The naive artist creates for the joy of expression.

2. Academic and technical level: The second level of creativity is the academic and technical level. At this level the artist learns skills and techniques, developing a proficiency that allows creative expression in myriad ways. The academic artist adds power to expression through the mastery of craft.

3. Inventive level: Many artists experiment with their craft, exploring different ways of using familiar tools and mediums. This heralds the level of invention. Breaking rules is the order of the day, challenging the boundaries of academic tradition, becoming increasingly adventurous and experimental. Inventors use academic tradition and skills as a stepping-stone into new frontiers.

4. Innovative level: At the level of innovation the artist, writer, musician, inventor, thinker is more original. Materials and methods that are out of the ordinary are introduced. Now the creator breaks the boundaries. The academic or inspirational foundation remains as a substructure of unconscious thought guiding these creative efforts.

5. Genius level: The fifth level of creativity is characterized as genius. There are individuals whose ideas and accomplishments in art and science defy explanation. Genius is arguably the one level that is unexplainable and perhaps unattainable for most of us, something that an individual is born with.

Fostering rules, Creative human resources and supportive structure are primitive needs of creative systems. Systematic creativity cannot lead to innovative creativity without integration of these parts.

2. Rules for Fostering Creativity

There are some simple rules in fostering creativity among individuals [29,30]:

1. Often creativity flourishes in places of safety and acceptance, and is born in an atmosphere of generosity, support, and nurturance.

2. Creativity grows among friends and celebrations, and withers among enemies and

confrontations.

3. Creative ideas are often fragile -- like children creative ideas and people deserve protection.
4. Creative successes are often preceded by failures -- for explorations, musings, daydreams, flights of fancy, trial and error are the natural companions of creativity.
5. Creating is a distinctly human trait. Exploring and fulfilling one's creative spirit is a sacred trust -- a potential given not just to selected individuals, but to all humans.
6. Violating someone else's creativity is an assault on the very essence of another's inner being.
7. Feedback on creative ideas and products should be supportive, and should build on strengths, never concentrate solely on weaknesses.
8. Often born from internal or external chaos, dissonance, strife, or disequilibrium, creative production can be a way of creating order, dealing with anger or grief, or solving problems as individuals seek to regain balance.
9. Being creative can be exhilarating, even addictive, and the creative spirit can be wonderfully contagious.
10. If one wishes to observe, appreciate and encourage creativity in oneself and others, one must learn to be quiet and still, to listen, and to watch, and see with the heart as well as the eyes.

3. Creative Human Resources

The most important factor in a successful systematic innovative creativity is potential creative individuals. We can measure and describe the things we create, but, as with invention, the process of creation that goes on inside our heads is far more elusive. The characteristics of creative human resources are as follows [6]:

1. Individual human talent is non-replicable.
2. The output of human capital is infinitely reusable.
3. The value of knowledge stocks is cumulative and exponential.
4. Returns to creative capital are tangible and intangible.

Indeed, improvement attempts to enhance the quality of creative human resource can make all efforts much productive [7]. Productivity of creative system goes higher by considering following individual creativity characteristics [8].

1. Display a great deal of curiosity about many things; are constantly asking questions about anything and everything; may have broad interests in many unrelated areas. May devise collections based on unusual things and interests.
2. Generate a large number of ideas or solutions to problems and questions; often offer unusual ("way out"), unique, clever responses.

3. Are often uninhibited in expressions of opinion; are sometimes radical and spirited in disagreement; are unusually tenacious or persistent -- fixating on an idea or project.
4. Are willing to take risks, are often people who are described as a “high risk taker, or adventurous, or speculative.”
5. Display a good deal of intellectual playfulness; may frequently be caught fantasizing, imagining or daydreaming. Often wonder out loud and might be heard saying, “I wonder what would happen if. . .”; or “What if we change . . .” Can I manipulate ideas by easily changing, elaborating, adapting, improving, or modifying the original idea or the ideas of others? Are often concerned improving the conceptual frameworks of institutions, objects, and systems.
6. Display keen senses of humor and see humor in situations that may not appear to be humorous to others. Sometimes their humor may appear bizarre, inappropriate and irreverent to others.
7. Are unusually aware of his or her impulses and are often more open to the irrational within him or herself. May freely display opposite gender characteristics
8. Exhibit heightened emotional sensitivity. May be very sensitive to beauty, and visibly moved by aesthetic experiences.
9. Are frequently perceived as nonconforming; accept disordered or chaotic environments or situations; are frequently not interested in details, are described as individualistic; or do not fear being classified as “different.”
10. Criticize constructively, and are unwilling to accept authoritarian pronouncements without overly critical self-examination.

4. Supportive Structure for Innovative Creativity

Creative system needs a supportive structure to integrate all necessary factors for innovative creativity to be flourished. Setting up and developing innovative results from creativity, drive and commitment of creative individuals are affected by the supportive structure. In this respect, it is important to investigate relationship between creativity and innovation [9].

Supporting creativity and innovation processes means (simultaneously) providing support for individuals and for teams as well as for convergence and divergence (describing phases in creativity and innovation). Providing support for creativity and innovation carried out through processes of facilitating activities during those phases [9, 10]. According to pioneers’ studies, enterprises are required to demonstrate creativity and innovation together if they are to survive and flourish in a competitive and increasingly demanding world. Understanding innovation and creativity concept will help to understanding the supportive structure and its duties [11].

Innovation goes beyond mere invention to mean the creative application of technologies, processes or ideas to some useful purpose. Innovation is becoming a highly valued

commodity, viewed as key to economic growth and competitiveness. As a result, pressure is increasing to identify areas that present the greatest opportunity for innovation and to develop models to accelerate the pace of innovation [12].

Innovation is defined in different ways [13, 14, and 15]. Schumpeter, Pavitt and Tidd defined innovation as a process encompassing the development of new ideas into marketable products/processes. In line with the foregoing definition, Freeman described innovation as a process comprising technical design, manufacturing, management, and commercial activities of new (or improved) products. Major studies on the innovation development process concepts are as follow:

Rogers believe that; the innovation development process comprises of six stages: (a) problem definition, (b) research (basic and applied), (c) development, (d) commercialization, (e) adoption and diffusion, and (f) consequences

The innovation development process of the manufacturing industry based on Cooper and KleinSchmidt theory comprises of: (a) Preliminary assessment, (b) detailed investigation (problem definition), (c) development, (d) testing and validation, and (e) commercialization

Kline & Rosenberg represents the chain-link model the process of innovation-a set of linked activities that may occur in a variety of sequences. A model includes the innovative activities as well as the elements of research, knowledge, and market.

Schmooklerto believes that development of technological innovation depends on the evolution of the market demand. The pull from the demand side influences the development of the product life cycle in technological innovation underlying the process of innovation is the strategic implication of successful innovation.

Creativity, knowledge and new ideas have become essential in an era where innovative business models enable organization to get ahead of competitors (Leibold, Tekie 2004) [16]. Creativity and innovations contain higher levels of subjectivity than other aspects of business and therefore training for creativity and innovation are often avoided in “hard” business training (reported by Van Vuuren 1997) [17].

The word innovation implies creativity, without which there would not be innovation. Also, innovation often requires or results from invention, which is certainly creative. Creativity is necessary but not sufficient for successful innovation. There must also be a good plan or strategy and good leadership for successful innovation coming from an individual or team, particularly when it has large financial or social impact. It was hypothesized that people with high levels of self-evaluated creativity will have high levels of implementation with regard to innovation. Individual persons initiate, contribute to and evaluate all parts of creativity and innovation processes. Their individual efforts and achievements are the basis for creativity and innovation [12, 18].

Moreover the role of intrinsic motivation in creativity and innovation was solidly supported by an interview study of 120 scientists by Amabile and Grysiewicz (1987). They found that “the single most frequently mentioned characteristic of highly creative work was intrinsic motivation - being motivated primarily from within, from the

scientist's own interest in the work itself and not from external pressures. In this study as in most of Amabile's research, intrinsic motivation is seen as a characteristic of the individual more than of the task [1].

In literature, there is a plenty of anecdotal evidence for the significant roles of individuals in innovation processes. Also promoting creativity and innovation in a team is another clearing important issue. Picking creative people with wide experience and knowledge, putting them in a supportive environment and challenging them with an interesting project with emphasize on creativity more than productivity cause creation of disruptive technologies in comparison with sustaining technology [3, 5 , 19].

Creativity is the process, through which innovation occurs, in other words, creativity is the enabling process by which something new come to existence (Amabile&Herbert, 1999)[1]. The creative process can be seen as the starting point of innovation, which gets into motion a series of events culminating in the entrepreneurial event.

Creativity among individuals working in particular fields comes from a combination of ability, skill, and incentive/strong interest in those fields. If one is to be creative and innovate successfully in a particular area, he/she must be at the forefront of the field and, as well, have a strong desire to innovate. These features often require creativity of a kind that does not contribute directly to the innovation but certainly is important for its success. Innovation supportive center must promote technological creativity and innovation culture by training creative people based on spreading incentives, expanding abilities and developing skills among creative individuals. Creativity Hybrid Triangle shows relationship between these concepts [20, 21].

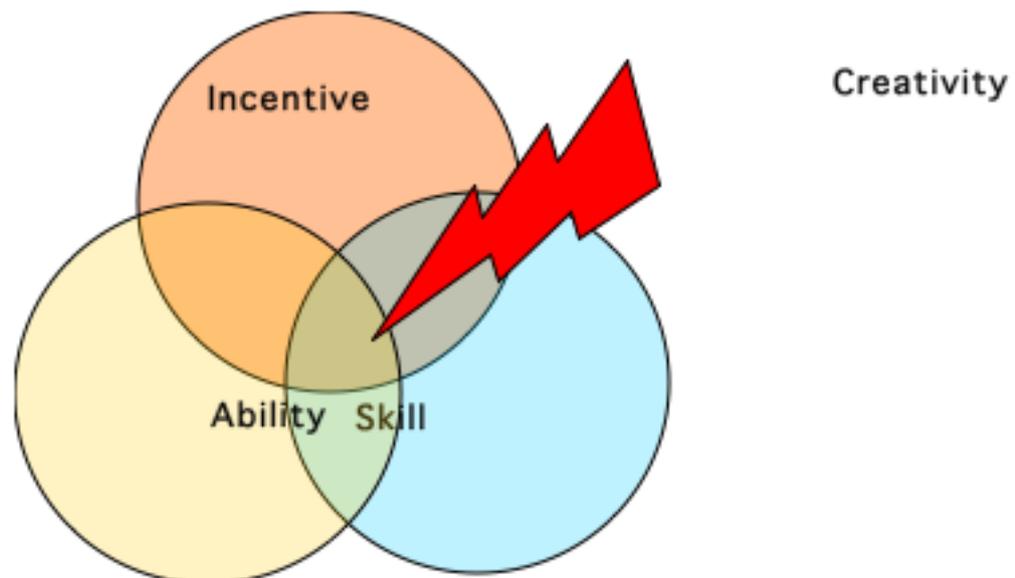


Figure1. Creativity Hybrid Triangle

With regard to the application of innovative creativity in the entrepreneurship domain, the first step of the process is for the potential entrepreneur to recognize an opportunity to innovate. To recognize an opportunity to innovate, the entrepreneur must participate in a creative activity [22]. After an opportunity is recognized, the entrepreneur must develop alternative courses of action to take advantage of this opportunity. At this point, ideas need to be enhanced, theories explaining the observed opportunities used to be developed, alternatives need to be compared, criteria established, problems defined and hypothesis and plans formulated [1]. The process has been shown in Figure 2.

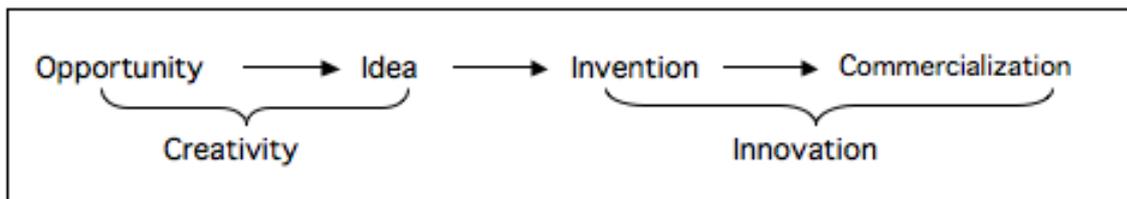


Figure 2. The Creativity-Innovation Process

The successful innovation needs an integration of creativity, in-house research activities, production activities, marketing, and interorganizational relationships.

5. YSTP Innovation Center, a Model for Fostering Creativity

Yazd Science and Technology Park (YSTP) Innovation Center was established in 2004. It was an initiative to pilot the implementation of National Innovation System. By understanding Inputs and Outputs of NIS, an investigation was conducted to find a supportive structure for creativity and innovation among creative individuals [15]. A gap analysis was applied to this architecture to achieve a system for supporting creative and innovative individuals. Innovation center was the result of the gap analysis and its duties were defined in accordance with YSTP objectives.

The theoretical contributions to the NIS literature have outlined the importance of institutions. Moreover, Francois Moreau has argued that a further theoretical development of the elements of NIS is necessary in order to success of other parts [23]. Owlia et al studied the emergence of innovation center as an infrastructure in Iranian science parks. Figure 3 shows the relations between Iranian NIS elements [24].

Innovation center is a supportive structure for Iranian creative individuals and adult innovators, comprising of 9 key elements of environment in which an individual innovator works. Supporting facilities and services which are provided for innovators was carefully considered and its outcome was evaluated and its feed back was used

to correct the implementation of innovation supporting system to make this process productive.

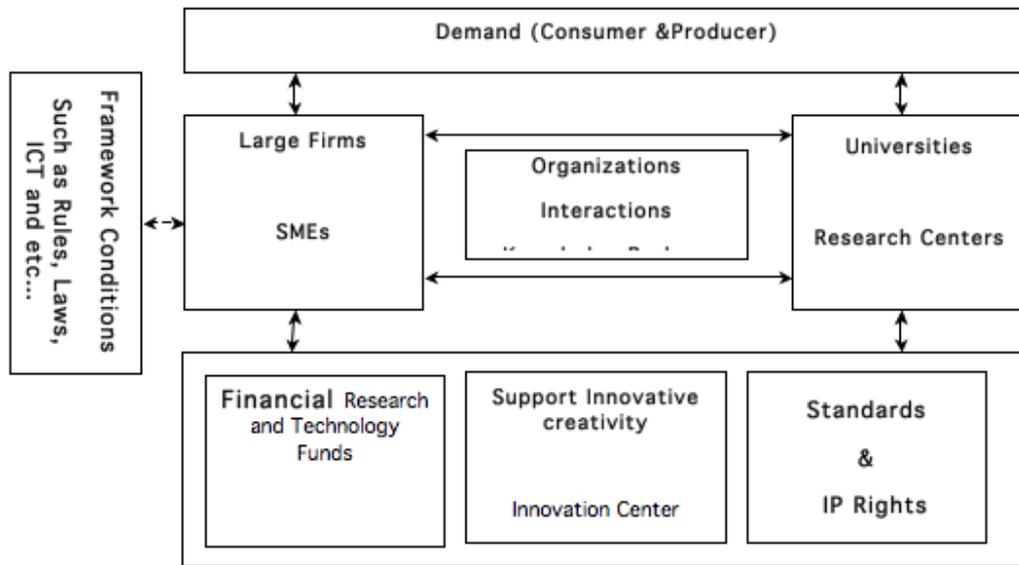


Figure3. Situation of supportive structure for creativity and innovation in Iran

Innovation center admits every individual with novel ideas. This center encourages individuals from university as well as markets and industry. Essence of this center shows that it has not been established based on linear chain link between ideas to markets. Ideas from market and industry help innovators to get feedbacks and improve the linear chain from idea to the market. Figure 4 shows the different steps of innovation process from idea to the market formed by theoretical aspects and experiences. Dashed lines show the idea originated in the market or in industry and come to the innovation center and flow in the idea chain (Idea- innovation- Hi-Tech Product-Market/Industry). This idea is originated because of market pull, whereas the ideas come from universities will cause developing an innovative product or process based on knowledge push.

Based on our observation the best creative individuals leave innovation center after their accomplishment of their task to take higher academic degree or establish their own business rather than working for other companies. YSTP innovation center develop Hi-Tech SMEs by supporting young creative individuals, potentially be able to become successful entrepreneurs.

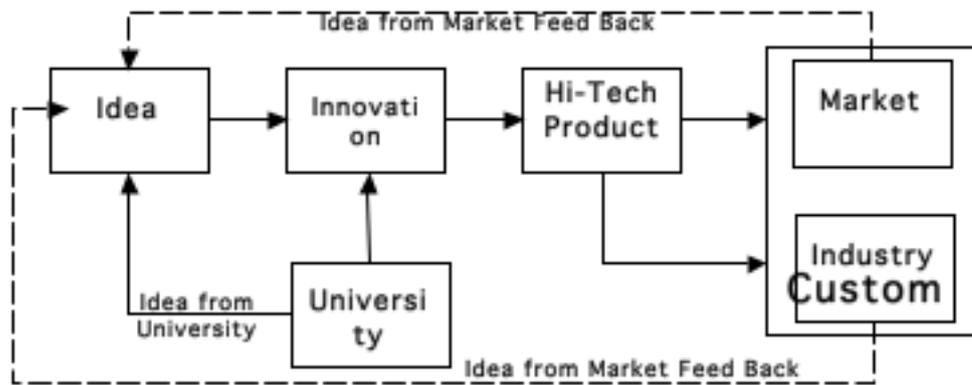


Figure 4. Idea chain feedback system (YSTP System)

6-Supportive Infrastructure for Fostering Innovative Creativity

Some demographic characteristics as well as features of the way in which innovators pursue their creative innovation-as individual entrepreneurs; were considered in addition to conventional focus on grants, awards and direct financial support. The most important key elements that make YSTP innovation center a place interesting for innovators and creative individuals are:

Direct or indirect validation of innovation

Public recognition, attendance in events and participating in national and international innovation festivals and exhibitions, interaction with other innovators and media coverage which exposes innovators to the general public are utilized to validate what innovators do.

Technical and business training opportunities

Even though university-based technological programs come immediately to mind when thinking about innovation training, our research show that innovators also get important amounts and types of training and professional development from a range of other sources, both formal and informal. Moreover it was experienced that training of business skills are not typically available in conventional university trainings.

Access to financial resources, equipments and materials

Cost is the fundamental barrier to accessing equipment. Sharing equipment typically brings down the cost. Innovators get access to the most equipments and laboratories devices by building networks and collaboration. Team work is another grouping format which enable them to use shared equipment more efficiently.

Data resources

Innovators access to the knowledge boundaries is the most important factor on the type of technology in which they involved. Disruptive technology is only created by

accessing to more advanced knowledge and the latest researches.

Creating a market for innovative products

Innovation center has a remarkable duty in marketing the innovation products. In one hand innovation center joints with HI-Tech industries and government and on the other hand adjacent to multi tenant companies of YSTP cause creation of a hybrid market in which young innovators can involve by their projects and sell their innovations.

Inward and outward connection to other innovators and non-innovators(network of innovation)

Communities and networks are vital to an innovators carrier. They facilitate access to training and professional development, material resources, information databases and IP registration. Networks can be both internal and external with national and international scope.

Award and grants

Awards and grants, in addition to being important validation mechanisms, provide financial and/or in-kind resources (such as residency, new chance to involve in new project and etc). Even a small grant can have a large impact on an innovator ability to work.

Physical environment

Innovators' need for workspace must be distinguished with other groups. Creative space can have a great impact on the quality of innovation. Meanwhile it is so important factor in attracting young innovators. Through the use of light colors, soft textures and elements of nature, a sense of calm emerges in the great historical interesting room, and plenty of open space to encourage creativity.



7-Working Processes of Innovation Center

Working processes of YSTP innovation center is constructed on the basis of the rules of fostering creativity and needs of creative individuals stated before.

a) Admission

Innovation center process is commenced with admission of creative people with a brilliant idea and continued with training creativity among innovators. Admission process starts by filling application form and presenting a proposal. In most situations,

assessment of creative proposals and ideas concerns applicability, usability, practicality, and cost of implementation, but as we are aware of obstacles and barriers in front of applicants, admission criteria is not fixed to these factors.

Questions that are considered in interview session are as follows:

Is it an improvement over what is presently done or used?

Is it financially feasible?

Is it only “cosmetic” and a “cover up” of the problem, or will it correct the difficulty or issue of concern in any field?

How long will it take to implement?

Does it have potential for sustained success or positive change in proposed field?

Is it compatible with existing knowledge/technology?

Is it in line with the context of any admitted SMEs?

What is the potential market?

Is it a Hi-tech innovation?

b) Project Control

One of the rules which are so important in running the innovation center is the sense of urgency. Trying to encourage young innovators to finalize their work is so crucial. Most of ideas which take long time will failure because they loose their interest and disappointed easily. Sense of urgency was created by following steps in YSTP innovation center:

Set goals: goal channel energy toward the target.

Set time line: time line create a healthy level of pleasure that prompts people to act faster

Tie the reward to the outcome, no outcome no reward.

Frequently remind all involved that time is running out from the minute you set your watch

Along the way the existing innovation process looking for ways to create and even faster better one.

We don't want the young admitted individuals to be a Gutenberg or Edison to generate creative ideas. We want them to devote the time to creating new innovations.

The other most frequently mentioned environmental factor associated with high creativity was freedom. It was “a sense of control over one's own work and own ideas. It has long been known that complete freedom is not likely to lead to satisfactory outcomes (e.g., Andrews and Farris 1967)[25, 26]. Successful creative teams are characterized by high levels of trust, freedom, respect for personality differences, tolerance of ambiguity and willingness to change. They also require low levels of direction, formal hierarchy and bureaucratic control. It was convinced that technological innovation in the years

ahead will be dependent on the creativity of those working in the research laboratories around the world.

c) Creativity Training

Because today's advanced nations depend heavily upon novel technologies, it will be important to develop an encouraging environment that will allow society's creative minds to flourish. Young minds should be exposed to creativity to foster innovative thinking. These individuals were open to new knowledge that would stimulate their minds—they were curious about everything. Innovative people might not have a possible solution in mind when they go in search of an innovation, but they have an approach to how to look for a solution.

d) Leadership Training

Leaders are individuals who lead, as opposed to managers who manage. In the future, only leaders with a proven track record and clear vision will be given responsibility to lead teams developing novel technologies [27, 28]. A leader's track record must provide evidence of individual creativity and sustained performance along with strong emphasis on delivery, or the ability to move from concept to successful implementation. These requirements are not as strict if the individual is part of a team that has a leader who does have the characteristics. One characteristic that is valuable for a team leader is his/her capability to encourage, enable and motivate the team members in their innovative efforts.

e) Helping to Form Multidisciplinary Teamwork and hot groups

Close cooperation and interaction among team members working on the development of novel concepts must take place from the very beginning of the project [29, 30]. Teams should be established early, so that each member will have a chance to contribute to, and participate in, creating the invention. Early involvement of the entire team will help it to focus on simplicity and manufacturing. This will be extremely important, given that the complexity of the multifunctional products will increase over time.

Leavitt and Lipman-Blumen offer the following suggestions for creating hot groups [31]: "Make room for spontaneity; encourage intellectual intensity, integrity and exchange; value truth and the speaking of it; help break down barriers; select talented people and respect their self-motivation and ability; and use information technology to help build relationships. YSTP innovation center gather young talent around each other and try to encourage teamwork among them. These groups supported to get their goal.

f) Mentoring

Our field research in YSTP suggests that foremost innovators need training and technical skill development in general aspects of their innovations. Meanwhile Mentoring is essential for young inventors to shorten their presence in innovation center successfully. Innovation center held various technical courses in different field such as IT & Computer, Electronic, Nanotechnology, Robotics and etc.

As a team or individual completed his innovation successfully he may continue his

cooperation with innovation center. These technicians which are skillful in their field transfer their tacit knowledge to the new admitted innovator and help fruitfulness of their mind. Also these individuals can work on YSTP project.

g) Assessment

Creative innovation is evaluated by the committee of experts in companion with admission committee to see the result of admitted novel idea. This committee investigates the results and outcomes of creative individuals or teams and gives some comments about the failure or success of innovators. This comment is used as lessons for future admission and assessment.

h) Registration of Innovation

Finally their innovative products or services are supported to apply for registration in IP office. This helps to formalize the innovation and to represent them in the potential market.

8. Conclusions

The Innovation Center Model was depicted according to the experiences in supporting creative and innovative people in Yazd Science and Technology Park. They were based on international background as well as the psychological and cultural characteristics of young creative Iranian people. The main points that can be concluded are:

Innovation process needs reengineering of conventional chain-link concept of idea to market. Feedbacks from market and industry by those who are engaged in market and industry can guarantee the market success of innovations more than university oriented innovations that are based on the knowledge push.

Creativity among individuals or teams, working in particular fields comes from a combination of ability, skill, and incentive/strong interest in those fields. To prevent fading novel ideas by young creative minds, a system must be developed to convert creativity into innovation. Fostering rules, creative human resources and supportive structure are primitive needs of creative system. Systematic creativity cannot lead to innovative creativity without integration of these parts. These basic factors are extracted from creativity literature.

Supportive infrastructures for fostering innovative creativity are crucial in innovation process. They could comprise direct or indirect validation of their innovation, conventional and lifelong training opportunity for young innovators, access to financial resources, equipments and materials innovators need for their work, data resources which they require to foster their innovation, creating a market for innovative products of innovators and encouraging business owners to use their products, inward and outward connection to other innovators and non-innovators, awards and grants, and appealing physical environment.

Although bureaucratic processes may hinder the flow of innovation, a clear and easy-going process is required to assure that innovation stages followed completely.

Working process of an innovation center could involve admission, project control, making creativity atmosphere, leadership training, helping to form multidisciplinary team works, helping the creation of hot groups, mentoring, assessment, and registration of innovation.

9. References:

- [1]. Amabile, T.M., "the social psychology of creativity," New York: Springer-Verlag
- [2]. M.Pretorius, S.M.Milard and M.E.Kruger " Creativity, innovation and implementation: management experience, venture size, life cycle stage, race and gender as moderators." S. Afr. J. Bus. Management, 2005, 36(4)
- [3] U.E.Haner, "Spaces for Creativity and Innovation in Two Established Organizations", Blackwell Publishing Ltd, 2005, Vol. 14, no.3
- [4] Working Group for the Prime Minister's Science, Engineering and Innovation Council, " THE ROLE OF CREATIVITY IN THE INNOVATION ECONOMY", 2 December 2005 p8
- [5]. "Team Talent: Bringing Creativity on Board", Supervisory Management (New York, N.Y.) v40 p7 April '95
- [6] C. Cortello, "Fostering Creativity", J. Industrial Engineer p 26 2005
- [7] Creativity and Productivity: Resolving the Conflict, Adv Manage J 69 no2 Spring 2004
- [8] , <http://www.uwsp.edu/> Wilson 1997, 2004
- [9]. M.Los, "Creativity and Technological Innovation in the United States", Research Technology Management v43 no6 p25-6 N/D 2000
- 10]. Leonard S. Cutler, " Creativity: Essential to Technological Innovation", Research Technology Management v43 no6 p29-30 N/D 2000
- [11] J. Benjamin Forbes, Donald R. Domm, " Creativity and Productivity: Resolving the Conflict", Adv Manage J 69 no2 Spring 2004
- [12]. The Human Resource Institute, "Stimulating Creativity and Innovation", Research Technology Management v40 p57-8 Mr/Ap '97.
- [13]. J. Wonglimpiyarat, N.Yuberkb," In support of innovation management and Roger's Innovation Diffusion theory", Gov Info 22 no3 2005
- [14]. J.Motwani; T.Dandridge; J.Jiang; K.Soderquist, "Managing Innovation in French Small and Medium-Sized Enterprises", Journal of Small Business Management v37 no2 p106-14 April '99
- [15]. J.Groenewegen, M. van der Steen," The Evolution of National Innovation

Systems”, Journal of Economic Issues 40 no2 J. 2006,p 277-85

[16] J.Harkins, “Managing creativity with half your brain”

[17] J. Hogan, “Releasing Creativity”, People Management v5 no20 p63 O 14 1999

[18].A.M. Pawlak, “Fostering Creativity in the New Millennium”, Research Technology Management v43 no6 p32-5 N/D 2000

[19]. Maria-Rosario Jackson,” Investing in Creativity: A Study of the Support Structure for U.S. Artists” J. Arts Manage Law soc 34 nol spring 2004

[20] Michel Wynne,” Value Innovation”, Global Cosmetic Industry 174 no8 Ag 2006, p60

[21]M.Driver,” Fostering Creativity in Business Education: Developing creative classroom environment to provide students with critical workplace competencies”, J. Education for Business 77 nol S/O 2001.

[22].D.Shirly, “ A practical guide to investing, Developing and producing Innovative Products”, Report Apr.1997

[23] D. Szmytkowski,” Innovation Definition”, Brussels 2005, Report.

[24].M.S.Owlia, E.Ekhtiari, Sh.Shookuhi, “Innovation Center a Model to Serve Iranian Innovator” 4th national conference on Industrial R&D, 10 Nov. 2005.

[25]. M. West, “How to Promote Creativity in a Team”, J. of People Management, 8March 2001.

[26].Richard Florida &Jim Good night,” Managing Creativity “, Harvard Business Review p124-131 July – August 2005

[27] J.Hogan, “Releasing Creativity” ,People Management v5 no20 p63 O 14 1999

[28] Osborn, A.Saickney,” Fostering Common Talent of Creativity “,Book. 1985. 2nd Revised Edition. Translated book to Farsi.

[29] A. Taylor, (1959) "The nature of creative process" (In P. Smith, ed. Creativity), Hastings House. New York.

[30] Leslie Owen Creativity: Essential to Technological Innovation, Research Technology Management v43 no6 p29-30 N/D 2000

[31] J.HARKINS, "Managing creativity with half your brain"

Mohammad Saleh Owlia; Shahram Shookuhi; Esfandiar Ekhtiyari (2008) A Climate for Attracting and Developing Creativity. Journal of Asia Entrepreneurship and Sustainability, (4)1, 38-54

Investigating Entrepreneurship Capabilities among Agricultural Students of Tehran University

Mojtaba Sookhtanlo

M.Sc. Student in Agricultural Extension and Education, University of Tehran,
Karaj, Iran

msookhtanlo@ut.ac.ir

Ahmad Rezvanfar

Associate Professor, Department of Agricultural Extension and Education, University of Tehran.

arezvan@ut.ac.ir

Abstract

The purpose of this study was to investigate entrepreneurship capabilities of agricultural students in the University College of Agriculture, University of Tehran. This study was performed in 2007-2008. Whole population was all agricultural students of B.Sc., M.Sc. and Ph.D. that were 2200 persons. By using stratified proportional random sampling, 250 persons were selected for study. For data collection from students a structured questionnaire was used. Data collected by use of questionnaire which its validity (Face validity) was obtained by a panel of experts and university professors. Reliability measured by Cronbach Alpha coefficient was tested and $\alpha=.82$ showed the reliability of the questionnaires. The criteria such as mean, standard deviation were calculated. In addition, Analysis of Variance (t Test) and (F test) in SPSS/win 13 software were used for data analyzing, and factor analysis method was employed this research were used for analyzing mean differences among groups. The findings indicated that it is disagreeing of late studies, that risk taking capability of female students (B.Sc & M.Sc) is higher than male students. Instead, capabilities of creativity (M.Sc) and Achievement motivation (Ph.D) of male students are higher than female students.

Key words: Achievement motivation, internal control, risk taking, independence, creativity.

Introduction

Since the mid 1970s, concerns have been rising over the socio economic situation of young people in many countries and the prospects of creating additional livelihood opportunities for them (Mkandawire, 1996; 1997; 2000; Schnurr, 1998; Bennell, 2000; Curtain, 2000; Bakilana and de Waal, 2002; Temba and de Waal, 2002). The world contains approximately one billion women and men who are in youth ages. This represents about 18 percent of the world's population. Of these, the International Labor Organization (ILO) in its World Employment Report 1998 1999 Estimates that 60 million are in search of work.

Unemployment for young men and Women remains at high levels around the world and is considerably higher than adult Unemployment in many countries and regions. In the developing countries of Africa, Asia and Latin America, 'urban unemployment rates for young people often reach over 30 percent, notes the report. Even in Developed countries, the Organization for Economic Cooperation and Development (OECD) has observed that with few exceptions, youth unemployment is in double Digits. However, the same scenario regarding to unemployment especially in the agricultural sector is going in Iran. According to Iranian Islamic republic Administration and planning organization (AOP), unemployment rate has increased from 9.1% in 1996 to 14.2% in 2001 (APO, 2002). In fact, lack of balance between Labor demand and supply is supposed to be the main reason. Labor supply is such that its increase rate during 1996 to 2001 in compare with 1.5 times long period of 1966 1996. Unemployment crisis will affect all economical, cultural and social aspects of a society and sometimes will be source of irremediable bad effects. Experiences have proved this crisis and its subsequent social effects neither don't have spontaneous, ideological and ethical solution, nor is it possible to eliminate it integrally and in a short time. Entrepreneurship has been announced as one of the solutions of this crisis by lots of countries (Mashayekh, 2002). Coming to English vocabulary by John Stewart Mill in 1848.

For the field of entrepreneurship, one of the important contributions is that of Mansfield, McClelland, Spencer & Santiago (1987). They sustain that the identification of relevant Entrepreneurial capabilities should provide insight into the field of entrepreneurship, and such capabilities might predict business formation and success within and across cultures. Other studies on entrepreneurial capability have been conducted by Chandler & Jansen (1992), Chandler & Hanks (1994), and Man & Lau (2002) in order to identify which Capabilities are crucial in starting and maintaining a business.

Ronstad (1985) suggested a set of fourteen skills to be developed through entrepreneurship education. Some of these skills included creativity, ambiguity tolerance, opportunity identification and venture evaluation, career assessment, deal making, networking, and ethical assessment. By examining six European entrepreneurship educations and training programs, Garavan and O'Conneide (1997) indicated that there were some specific elements which formed part of the content of all programs. These elements included reality testing skills, creativity, ambiguity tolerance and stress coping mechanisms. They argued that the consideration of these elements recognizes the unique situations

faced by entrepreneurs.

Hood & Young (1993) maintain that four primary areas must be developed for entrepreneurial success. These areas focus on content, skills and behaviors, mentality and personality. By asking 100 leading entrepreneurs and chief executive officers (CEOs) in America's fastest growing entrepreneurial firms. Hood & Young (1993) found that content areas of knowledge are those mainly addressed on business education, such as finance, cash management, accounting, and marketing. Leadership, oral and written communication, and human relations are the most important skills for successful entrepreneurship (Hood & Young, 1993).

Moreover, mentality factors include creativity, opportunistic thinking and vision. The fourth area refers to personality traits, which are usually believed to be more stable and therefore, less likely to be changed (Hood & Young, 1993). Brockhaus (1982) found that entrepreneurs have greater internal locus of control than the general population; therefore, entrepreneurs believe that the outcome of a business venture will be influenced by their own efforts.

The result of research of Reynaldo et al. (2002) showed students were weakest in Opportunity Seeking, Risk Taking, and Self Confidence. Practicing entrepreneurs were weakest in Risk Taking. Generally, capabilities of students do not significantly vary by school, age, gender, or year level. Capabilities of practicing entrepreneurs considerably differ by location and age, but are not discriminated by gender, number of years in service, and product type. In this research of recently two decade of 20 century, five properties, Achievement motivation (Delmar, 1996; Johnson, 1990; Miner, 1994, 1992; Bellu et al., 1995), Risk taking (McClelland et. al., 1969; Heath et al., 1991), creatively (Druker, 1986; Rissal, 1992), Independence (Brockhaus, 1982; Vesper, 1990) and internal control (Williams, 1987; Perry et al., 1988; Hood et al., 1993; Gatewood et al., 1995) have attracted more attention. According to recently done researches, promoting these properties will result in entrepreneurship capabilities advancement.

McClelland (1961) cited entrepreneur capabilities are for achievement, Risk taking, creatively, Independence and internal control. Friedrich et al. (2003) report on the findings of McClelland's Achievement Motivation training of small business conducted in India and in the USA in 1969. The results showed evidence that Achievement Motivation Training significantly improves small business performance, provided that there is some minimum support from the economic infrastructure in the form of available loans, market opportunities and the labor force. The result of study accomplished by Reynaldo et al. (2002) showed the students were weakest in Opportunity Seeking, Risk Taking, and Self Confidence. Practicing entrepreneurs were weakest in Risk Taking. Generally, capabilities of students do not significantly vary by school, age, gender, or year level. Capabilities of practicing entrepreneurs considerably differ by location and age, but are not discriminated by gender, number of years in service, and product type. The purpose of this study is to Investigated Entrepreneurship capabilities of university students, by focusing on 5 above named (Achievement, Risk taking, Creatively, Independence and Internal control) characteristics, between all agricultural students of

B.Sc., M.Sc. and Ph.D university of Tehran.

Purposes and objectives

The main purpose of this study was Investigating Entrepreneurship capabilities among Agricultural Students of Tehran University. The special objectives of the study were:

- Identification of ranking Entrepreneurship capabilities among respondents;
- Investigating of Entrepreneurship capabilities among respondents, from of educational levels;
- Gender Analysis of Entrepreneurship Capabilities among all the agricultural students (B.Sc, M.Sc, and Ph.D);

Methodology

The purpose of this study was to investigate entrepreneurship capabilities among agricultural students in the University College of Agriculture, University of Tehran in Iran. This study was performed in 2007 2008. Whole population was all agricultural students of B.Sc, M.Sc and Ph.D that were 2200 persons. By using stratified proportional random sampling 250 persons were selected for study. For data collection from students a structured questionnaire was used. The questionnaire consisted of standardize tests of Hans risk taking, Torence creatively, Ratter internal control, Bahargava achievement motivation and Hisreach independency. (McClelland & winter, 1969; Johnson, 1990; Heath & A.Tuersky, 1991; Bellu & Sherman, 1995; Galbraith, 2002; Howard, 2004). For data collection from students a structured questionnaire was used.

Data collected by use of questionnaire which its validity (Face validity) was obtained by a panel of experts and university professors. Reliability measured by Cronbach Alpha coefficient was tested and ($\alpha=.82$) showed the reliability of the questionnaires. The criteria such as mean, standard deviation were calculated. In addition, Analysis of Variance (t Test) and (F test) in SPSS/win 13 software was used for data analyzing, and factor analysis method was employed this research were used for analyzing mean differences among groups.

Table (1). Reliability coefficient for the major variables

Variable	Number of items	Items dropped	Cronbach alpha
Achievement motivation	1-12	10	0.82
Internal control	13-24	12	0.74
Risk taking	25-36	12	0.85
Independence	37-48	12	0.77
Creativity	49-60	14	0.81
Total alpha=0.82			

Results and discussion

Characteristics of the respondents

According to data collected in this study, statistical society was consisted of 52 % B.Sc, 30 % M.Sc and 18 % Ph.D students from among all the agricultural students (B.Sc, M.Sc, and Ph.D) were consisted of 64%, 47% and 28% female students and 34%, 53% and 72% male students. The majority of 17.2 percent of this society had studied “Agronomy and plant breeding” and the minority of 4.4 percent was “animal science” students. Other fields involved in this study were irrigation and drainage, food science and industries, horticulture, extension, pedology, plant pathology and agricultural machineries, respectively. 87.6% of study society had never passed any entrepreneurship educational levels, 6.4% had passed only one course and the remaining had participated in more than one course (table (2)).

Table (2). Frequency and frequency Percentage of respondents

Frequency Percent- age	Frequen- cy	Training course gender
66	85	B.Sc male
34	45	female
47	35	M.Sc male
53	40	female

		Ph.D
28	13	male
72	32	female

Main rank distribution of respondents according to their entrepreneurship capabilities

To measure entrepreneurship capabilities of agriculture students of university of Tehran (UT), five variables Achievement motivation, Risk taking, creatively, Independence and internal control were chosen. Criterion score was computed from average score of each variable in each questionnaire. As it can be seen from table (3), these five capabilities are internal control, risk taking, independence, creativity and achievement motivation, respectively. However, comparing criterion score, only risk taking and creativity of students were above criterion.

Table (3). Main rank distribution of respondents according to their entrepreneurship capabilities

Rank- ing	C.V	Standard deviation	Mean	Entrepreneurship capabilities
1	0.241	0.878	43.02	Risk taking
2	0.251	0.942	37.50	Achievement motivation
3	0.274	0.933	39.60	Independence
4	0.283	0.861	42.42	Creatively
5	0.312	1.01	38.76	Internal control

Entrepreneurship and educational levels

To identify the differences between entrepreneurship capabilities considering the education level (table (4)), F test was used. It was found that there is not any significant difference between entrepreneurship capabilities among students (B.Sc., M.Sc. and Ph.D) and educational levels.

Table (4). Advertising of Entrepreneurship capabilities among all Agricultural Students, from of educational levels

Entrepreneurship capabili- ties educational levels	Mean	Standard devia- tion	F	Sig.
Achievement motivation				
B.Sc	39.6	0.870	1.035	0.31
M.Sc	35.9	0.971		
Ph.D	36.9	0.987		

Internal control				
B.Sc	25.92	0.969	0.416	0.52
M.Sc	45.48	1.030		
Ph.D	44.88	1.050		
Risk taking				
B.Sc	46.44	0.867	0.149	0.70
M.Sc	44.04	0.914		
Ph.D	40.02	0.853		
Independence				
B.Sc	28.68	0.942	1.630	0.20
M.Sc	47.40	0.903		
Ph.D	46.32	0.954		
Creatively				
B.Sc	28.56	0.830	0.019	0.89
M.Sc	48.86	0.889		
Ph.D	49.98	0.866		

Gender Analysis on Entrepreneurship Capabilities of Agricultural Students

Entrepreneurship capabilities among Agricultural Students (all), from gender

The result of table (5) according to, in order to identify the differences between entrepreneurship capabilities considering the gender, T test was used. Contrary to previous studies, this comparison revealed that female students showed a higher risk taking ability ($p < 0.01$) and Achievement motivation ($p < 0.01$).

Table (5). Entrepreneurship capabilities Comparison of male and female students (all).

Entrepreneurship capabilities gender	Mean	Standard deviation	T	Sig.
Achievement motivation				
male	37.10	5.101	** 1.101	0.001
female	38.00	3.962		

Internal control				
male	37.08	8.686	3.769	0.092
female	32.52	8.082		
Risk taking				
male	41.52	5.883	**3.241	0.002
female	44.28	4.133		
Independence				
male	40.32	8.361	3.654	0.220
Female	35.28	7.918		
Creatively				
male	36.54	6.705	*4.355	0.003
female	31.22	5.631		

Entrepreneurship capabilities among Agricultural Students (B.Sc), from gender
The result of table (6) according to, this comparison revealed that female students (B.Sc), showed a higher risk taking ability ($p < 0.01$) than male students (B.Sc).

Table (6). Entrepreneurship capabilities Comparison of male and female students (B.Sc).

Sig.	T	Standard deviation	Mean	Entrepreneurship capabilities gender
0.242	2.330	0.970 0.989	35.70 37.00	Achievement motivation male female
0.103	1.380	1.080 0.964	44.52 46.32	Internal control male female
0.006	2.773**	0.895 0.855	39.12 42.12	Risk taking male female

0.318	1.003	0.933	49.56	Independence male
		0.910	35.28	Female
0.853	0.185	0.806	49.28	Creatively male
		0.840	49.56	female

Entrepreneurship capabilities among Agricultural Students (M.Sc), from gender

The result of table (7) according to, this comparison revealed that female students (M.Sc), showed a higher risk taking ability ($p < 0.01$) than male students (M.Sc). Versus male students (M.Sc), showed a higher creatively ability ($p < 0.05$) than female students (M.Sc).

Table (7). Entrepreneurship capabilities Comparison of male and female students (M.Sc).

Sig.	T	Standard deviation	Mean	Entrepreneurship capabilities gender
0.376	0.563	0.649	35.90	Achievement motivation male
		0.596	34.60	female
0.625	0.525	0.564	45.00	Internal control male
		0.528	45.72	female
0.001	1.550**	0.725	38.04	Risk taking male
		0.354	40.68	female
0.313	0.901	0.606	46.44	Independence male
		0.495	47.76	Female
0.040	0.758*	0.643	48.72	Creatively male
		0.454	47.18	female

Entrepreneurship capabilities among Agricultural Students (Ph.D), from gender

Because the number of male students (Ph.D).is lower of 30, therefore at first, it was performed One Sample Kolmogorov Smirnov Test; That Test distribution to become Normal. Then T test was used. The result of table (8) according to, male students (Ph.D), showed an Achievement motivation ability ($p < 0.01$) than female students (Ph.D).

Table (8). Entrepreneurship capabilities Comparison of male and female students (Ph.D).

Sig.	T	Standard deviation	Mean	Entrepreneurship capabilities gender
0.005	0.742**	0.680	37.60	Achievement motivation Male
		0.657	35.90	female
0.117	0.413	0.755	44.76	Internal control Male
		0.622	43.56	female
0.756	0.222	0.524	38.64	Risk taking Male
		0.516	39.24	female
0.862	0.249	0.589	48.48	Independence Male
		0.567	49.02	Female
0.749	0.227	0.483	47.74	Creatively Male
		0.412	48.16	female

Conclusions and recommendations

The results of tables (3, 5 & 8) according to, factors of risk taking and achievement motivation, had explained the highest factors of entrepreneurship capabilities among agricultural students of Tehran University. Therefore, seem that there are leisure crisis in agricultural fields, lack of security of occupation, variety and spreading activity fields in agricultural sector, the proximity of agricultural colleges of Tehran University to the ministry, organizations, business companies of agricultural, cooperatives and

agricultural major centers of the country that to be centralized in Tehran, there was possibility of a facile access and also students to refer to obtain information for this organizations, to be existence entrepreneurship center in Tehran University and purposeful visits from successful entrepreneurship projects entrepreneur in to increase of tendency of students to risk taking and achievement motivation are affecting to factors other.

The findings (table (4)) indicated that in according to educational levels, there weren't significant different among students (all) in entrepreneurship capabilities. Although from academic sector students expected to have higher a level of entrepreneurship capabilities. Therefore educational levels and university variety courses not affecting to growth and training of students' entrepreneurship capabilities. So careful to leisure crisis in agricultural fields, vital to pay attention to directed university educational content to promoting fields appearing entrepreneurship and encouragement and support of scientific and research plans of students more than before years. For the appearing entrepreneurship capabilities among all the agricultural students, requires basic review in content of present courses, teaching methods, more cooperation between universities and ETC and directed educational programs all the agricultural courses in to trained entrepreneurship capabilities among students.

The results of tables (5, 6 & 7) according to, in contrary to previous studies, such as Galbrit (2002) and Agha (2002), this study revealed that female students of UT Agriculture College showed a higher risk taking and Achievement motivation abilities than male students. It seems that since females have a lower chance of finding job in governmental sectors and considered increasing women unemployment rate and job insecurity, female students showed a higher risk taking tendency. This problem to cause appearing of risk taking and achievement motivation (table (8)) in female students to male students. Therefore there were factors affecting in female students' entrepreneurship capabilities, such as: celebrate entrepreneurship training shops and to get accustomed with women self employment strategies, training courses of business products cultivation and conferences for to get accustomed with obtained conditions of self employment loans, agriculture, rules of supported related to increasing female students' entrepreneurship capabilities.

In according to (table 4), in doctorial course achievement motivation capability male students the more than female students. the proximity of agricultural colleges of Tehran University to the ministry, organizations, business companies of agricultural, cooperatives and agricultural major centers of the country that to be centralized in Tehran, there was possibility of a facile access and also students to refer to obtain information for this organizations, to be existence entrepreneurship center in Tehran University and purposeful visits from successful entrepreneurship projects entrepreneur

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References

Agha, R. (2002). Are the women less ambitious than men? GKT scientific, Guys, Kings & ST. Thomas hospitals school of medicine. Dentistry and biomedical science. London. UK. Vol. (16).

Bakilana, A. and de Waal, A. (2002), 'Child survival and development in Africa in the 21st century'. In A. de Waal and N. Argenti (eds.) *Young Africa: Realizing the Rights of Children and Youth*. Africa World Press, Trenton.

Bennell, P. (2000), 'improving youth livelihoods in SSA: a review of policies and Programmes with particular emphasis on the link between sexual behavior and economic well being. Report to the International Development Center (IDRC), 2000.

Bellu, R.R. – Sherman, H. (1995). Predicting the success from task motivation and attribution style. A Longitude study. *Entrepreneurship & Regional Development*, 349-363.

Brockhaus, R. H. (1982). *The Psychology of The entrepreneurs*. In Kent, C. A., Sexton, D. I., *Encyclopedia of Entrepreneurship*. Englewood cliffs, NJ: Prentice Hall.

Chandler G. N. & Jansen E. (1992). The Founder's Self assessed Competence and Venture Performance, *Journal of Business venturing*, 7, 223-236.

Chandler, G. N. & Hanks, S. H. (1994). Founder Competence, the Environment, and Venture Performance, *Entrepreneurship Theory and Practice*, 18, 77-89. Garavan, T.N. and O'Conneide, B. (1994). Entrepreneurship Education and Training Programmes: A Review and Evaluation – Part 2, *Journal of European Industrial Training*, 18, 13-21.

Curtain, R. (2000). 'Towards a youth employment strategy'. Report to the United Nations on Youth Employment, August. Hood, J. N. & Young, J. E. (1993). Entrepreneurship's Requisite Areas of Development: a Survey of Top Executives in Successful Entrepreneurial Firms, *Journal of Business Venturing*, 8, 115-135.

Delmar, F. (1996). Entrepreneurial behavior and business performance. Economic performance. Economic research institute, Stockholm.

Druker, P. (1986). "The Discipline of Innovation"; *Harvard Business Review*, May/June, pp. 67-72.

Garavan, T., O'Conneide, B., Fleming, P., McCarthy, B., Downey, A. (1997). *Entrepreneurship & Business Start Ups in Ireland*, Oak Tree Press, Dublin.

Iranian Islamic republic Administration and planning organization (2002). Internal report.

Gatewood, E. J., K. G. Shavera & W. B. Gartner (1995). "A Longitudinal Study of Cognitive Factors Influencing Startup Behaviors and Success at Venture Creation", *Journal of Business Venturing*, 10, 371-391.

Heath, C., & Tversky, A. (1991). Preference and Belief Ambiguity and Competence in Choice under uncertainty. *Journal of Risk and Uncertainty*, 4, 5-28.

Hood, J. N. & Young, J. E. (1993). Entrepreneurship's Requisite Areas of Development: a Survey of Top Executives in Successful Entrepreneurial Firms, *Journal of Business Venturing*, 8, 115-135.

Johnson, B.R (1990). Toward a Multi dimensional model of Entrepreneurship: The case of Achievement motivation and the entrepreneur. *Entrepreneurship Theory and practice*. 14(3), 39-54.

McClelland, D.C. & Winter, D.G. (1969). *Motivating economic achievement*. The free press. New York.

McClelland, D. C. (1973). Testing for Competence rather than for Intelligence, *American Psychologist*, 28, 1-14.

Man T. W. Y., Lau T., Chan K. F. (2002). The Competitiveness of Small and Medium enterprises: A conceptualization with Focus on Entrepreneurial Capabilities, *Journal of Business Venturing*, 17, 123-142.

Man T. W. Y. & Lau T. (2000). Entrepreneurial Capabilities of SME Owner/Manager in the Hong Kong Services Sector: A Qualitative Analysis, *Journal of Enterprising Culture*, 8, 235-254.

Mansfield, R. S., McClelland, D.C., Spencer, L. M., & Santiago, J. (1987). The identification and assessment of capabilities and other personal characteristics of entrepreneurs in developing countries, Final Report: Project No. 936-5314, Entrepreneurship and Small Enterprise Development, Contract No. DAN 5314 C 00 3065 00. Washington, DC: United States Agency for International Development: Boston: McBer.

Mashayekh, F. (2002). *New Visions in curriculum*, third publish, Iran, Tehran, SAMT publication.

Mkandawire, R.M. (1996). 'Experiences in youth policy and programme in Commonwealth Africa'. Unpublished Policy Document Prepared for the Commonwealth Youth Programme Department.

Mkandawire, R.M. (1997). 'The Alienated youth, disillusioned and resilient youth in Africa: present and future employment prospects'. Unpublished paper. Commonwealth Youth Programme Africa Centre, Lusaka.

Mkandawire, R.M. (2000). Alienated, criminalized and stigmatized youth subcultures of South Africa. Paper Presented at the Kopano – Southern Africa Regional Exchange

Conference, Dikhololo, North West Province, 20 25 Th, July.

Miner, J. B. Smith, N. R., & Bracker, J. S. (1992). Predicting Firm Survival from Knowledge of Entrepreneur Task Motivation in the Growth of Technologically Innovation Firms: Interpretations & Regional Development, 4, 145 153.

Miner, J. B. Smith, N. R., & Bracker, J.S. (1994). Role of Entrepreneurial task motivation in the growth of technology innovation firm: Interpretations from follow up data. *Journal of Applied Psychology*, 79(4), 627 630.

Onstenk J. (2003). Entrepreneurship and Vocational Education, *European Educational Research Journal*, 2, 74 89.

Perry, G., G. Meredith, H. J. Cunnington (1988).” Relationship between Small International Business Management, April, 76 79.

Reynaldo S. Bautista, GE; Maria Joan Pablo Barlis, Asuncion G. Nazario, MSBA. (2002). The Personal Entrepreneurial Capabilities of BS Entrepreneurship Students of the Cordillera Administrative Region and Practicing Entrepreneurs in the Cities of Baguio, Dagupan and San Fernando, La Union: A Comparison. Sponsored by the Commission on Higher Education

Rissal, R. (1992). A Study of the Characteristics of Entrepreneurs in Indonesia; EDD Dissertation. U.S.A.: George Washington University.

Ronstad, R. (1985). The Educated Entrepreneurs: A New Era of Entrepreneurial Education is Beginning, *American Journal of Small Business*, 10, 7 23.

Schnurr, J. (1998). ‘Sustainable livelihoods for youth’. Draft Report on IDRC Research Findings.

Temba, K. and de Waal, A. (2002). ‘Implementing the Convention on the Rights of the Child’. In A. de Waal and N. Argenti (eds.) *Young Africa: Realising the Rights of Children and Youth*. Africa World Press, Trenton.

Vesper, K. (1993). *Entrepreneurship Education*. Wellesley, MA: Center for Entrepreneurship’s study.

Williams, A. J. (1987).” The characteristics and performance of small business in Australia (1973 to 1985): A study of the characteristics of Australian small business ventures and their owner manager, and a longitudinal investigation of their economic performance, university of Newcastle monograph.

Mojtaba Sookhtanlo; Ahmad Rezvanfar (2008) Investigating Entrepreneurship Capabilities among Agricultural Students of Tehran University. *Journal of Asia Entrepreneurship and Sustainability*, (4)1, 55-68

A Discriminant Model for Assessment of Prospective Entrepreneurs for Financing and Success of Entrepreneurial Venture

Tarak Nath Shaw

Faculty Member

E mail: taraknath2003@yahoo.co.in , taraknaths@ibsindia.org

ICFAI Business School

ICFAI University

C – 1/101, Indira Nagar, Dehradun- 248006 India

Abstract

The entrepreneurial quality and management competence of the entrepreneur plays an important role in the success of an enterprise. The evaluation of the entrepreneur is therefore a prerequisite while appraising a project for financial assistance. Banks and financial institutions in India employ purely judgmental appraisal procedures to assess the capabilities of the entrepreneur. As a part of the research study on the influencing factors on effectiveness of entrepreneurs, research data pertaining to some “successful” and “unsuccessful” small business entrepreneurs of Jharkhand state situated in the eastern part of India have been used to develop the Discriminant Model. It has been postulated in the research that entrepreneurial success is a function of entrepreneurial traits, attitude and business skills. The Discriminant Model obtained by the use of SPSS package was able to classify 96.2% of the entrepreneurs correctly as “successful” or “unsuccessful” entrepreneurs. The value of Wilk’s Lambda (0.176) suggesting good discriminating power of the model. The Standardized Canonical Discriminant Function Coefficients for entrepreneurial traits (0.751), attitude (-0.059) and business skills (0.647) suggests that entrepreneurial traits and business skills are better predictor between “successful” and “unsuccessful” entrepreneurs. The Discriminant Model developed herein can be used as a quantitative tool to assess entrepreneurs, provide financial assistance to the right kind of entrepreneurs and thereby reduce the chances of loans becoming Non Performing Assets.

Key Words

Non Performing Asset (NPA): A loan or lease that is not meeting its stated principal and interest payments. Banks usually classify as nonperforming assets, any commercial loans which are more than 90 days overdue and any consumer loans which are more than 180 days overdue and generally, an asset which is not producing income.

Reserve Bank of India (RBI) is the central bank of India, and was established on April 1, 1935 in accordance with the provisions of the Reserve Bank of India Act, 1934. The main objectives of RBI are to function as monetary authority, regulator and supervisor of the financial system, manager of exchange control, issuer of currency, developmental role and related functions.

Sick SSI units: A small scale unit is considered as sick when (a) if any of the borrowal accounts of the unit remains substandard for more than six months, i.e., principal or interest, in respect of any of its borrowal accounts has remained overdue for a period exceeding one year will remain unchanged even if the present period for classification of an account as substandard is reduced in due course or (b) there is erosion in the net worth due to accumulated losses to the extent of 50 per cent of its net worth during the previous accounting year, and (c) the unit has been in commercial production for at least two years.

Small Scale Industries: Industrial undertaking in which the investment in fixed assets in plant and machinery, excluding land whether held on ownership terms or on lease or on hire purchase, does not exceed Rs. 10 million.

SME (Small & Medium Enterprises): As per the Micro, Small and Medium Enterprises Development Act of 2006, the government of India has defined SMEs as entities that have an investment of above Rs 10 million and below Rs 100 million in plant and machinery.

Introduction

Small Scale Industries (SSI) occupies a place of strategic importance in the Indian economy in view of its considerable contribution to employment, production and exports. They are extremely important for the health of any country. In most developed and developing countries, the small scale industries have played a critical role in industrialization and economic development. They are the major contributors to the social and economic benefits for any country. Today, governments worldwide recognize the importance of Small & Medium Enterprises (SMEs) and their contribution to economic growth, social cohesion, employment and local development. SMEs account for over 95% of enterprises and 60-70% of employment and generate a large share of new jobs worldwide (www.oecd.org).

The small firms are seen as vehicles for employment generation in most of the countries. The small-scale sector in India has now been identified by the government as one that can assist in generating additional employment, indigenizing technology, leveraging cheap labor and flexibility of operations to create competitive advantage for the Indian industry (Mitra & Pingali, 1999). By the end of March 2000, the SSI sector in India accounted for nearly 40 % of gross value of output in the manufacturing sector and 35 % of total exports from the country. The SSI sector comprising of 3.20 million units has provided employment to about 18 million people (www.smallindustryindia.com).

In spite of all the initiatives taken by the government and support institutions to promote the entrepreneurs, the sickness in the SSI sector in India has been gradually increasing and it is a matter of concern and debate. Large numbers of SSI units are sick with little scope for any improvement in the near future. Sickness in the industrial sector results in locking up of resources, wastage of capital assets, loss of production and rising unemployment in the country.

According to the information compiled by Reserve Bank of India (RBI) from scheduled commercial banks, as of 31st March 1999, there were 3,09,013 sick/weak units consisting of 3,06,221 units in the SSI sector and 2,792 units in the non-SSI sector. The number of total sick SSI units has increased from 2, 21,536 units in 1998 to 3, 06,221 units in 1999. There is an overall increase of 38% in the total number of sick/weak SSI units. The total bank credit blocked in the sick units has increased from Rs. 156.82 billion (as of March 31, 1998) to Rs. 194.64 billion (as of March 31, 1999). The small-scale sector has Rs. 43.13 billion (22.20 %) blocked in its units (www.indiabudget.nic.in).

There has been a gradual increase in the number of sick units and Non Performing Assets of banks and financial institutions. The Non Performing Assets of banks blocked in the SSI sector was Rs. 102.85 billion as of March, 31, 2001 and it is 18.78% of the gross NPA. There have been noticeable improvements in the financial health of banks in terms of asset quality. The net NPAs have continually declined from 14.46% in 1993-94 to 6.74% in 2000-01 due to the tightening of prudential norms in the classification of NPAs by banks (Reddy, 2002).

The increase in Non Performing Assets has been a serious concern for the banks and financial institutions. The recovery of outstanding dues from the SSI sector has become an uphill task. Banks and financial institutions have gone for one time settlement and the formula for one time settlement was arrived at 25 – 30% of the outstanding dues and the paying capacity of the borrower.

It is has been postulated in the research that effectiveness of entrepreneurs is a function of entrepreneurial traits, attitude, business skills and the environmental forces affecting business success. Assuming that government is promoting the entrepreneurs by providing the requisite support facilities and in spite of that sickness is increasing in the SSI sector. It becomes imperative to probe whether the entrepreneurs possess the requisite entrepreneurial traits, attitude and business skills required for business

success? Therefore it is of utmost importance to assess the entrepreneur in terms of his/her entrepreneurial traits, attitude and business skills to ensure business success, prevent financial resources getting converted into Non Performing Assets and providing financial support to those entrepreneurs who possess the requisite entrepreneurial traits, attitude and management competence required for business success.

Not even the best formulated project or evaluation can ensure the success of a project without adequate management expertise and entrepreneurship of the project proponents. The management competence and the entrepreneurial quality have to be assessed properly and a judgment be rendered whether project proponents indeed have the competence to run the enterprises smoothly and efficiently. Evaluation of entrepreneurs is the most vital input for the success of business enterprise. It is the backbone of a project from appraisal stage to successful implementation and future growth. It is the managerial skills and entrepreneurial qualities that make the difference between success and failure of an enterprise. A good promoter or manager can improve the prospects of a project and may show excellent results. However, in the hands of a weak entrepreneur even a sound project might suffer badly.

Therefore, crucial importance is attached to the individuals behind the project. The evaluation of the entrepreneur and his/her management style is therefore a prerequisite in the appraisal of a project for financial assistance. Banks and financial institutions do examine the viability of the project before providing the necessary financial assistance. They have to ensure that the project generates sufficient returns on the resources invested. With the shift from security oriented lending, the importance for application of appraisal techniques has increased.

While evaluating loans, most banks employ purely judgmental appraisal procedures. A banker collects information regarding the borrower's capacity, character and collateral being provided by the entrepreneur for the loan being sought. However, in pure judgmental analysis, the banker subjectively interprets the information in the light of the bank's lending guidelines and accepts or rejects the loan. Up-till now no quantitative methods for appraisal of entrepreneurs for financing is being used especially in India. Most Indian banks do a qualitative assessment of the entrepreneur based on their interaction. A quantitative approach for evaluation of the entrepreneurial quality and managerial style of the entrepreneur is therefore a fundamental requisite in the appraisal of a project for financial assistance.

As a part of the research study on the influencing factors on effectiveness of entrepreneurs, research data pertaining to some "successful" and "unsuccessful" entrepreneurs of Jharkhand state situated in the eastern part of India has been used to develop the Discriminant Model. It has been postulated in the study that success is a function of entrepreneurial traits, attitude and business skills. Three predictor variables namely entrepreneurial traits, attitude and business skill were taken in the study to develop the Discriminant Model to classify the entrepreneurs under the category of "successful" or "unsuccessful" for financing decisions.

Literature Review

In dealing with the review of literature for development of the Discriminant Model for assessment of prospective entrepreneurs for financing and ensuring success of the entrepreneurial venture, the present exercise draws attention in the areas of understanding the entrepreneur and identifying those attributes under entrepreneurial traits, attitude and business skills which contributes to business success.

According to Merriam Webster dictionary an entrepreneur is an individual who organizes, manages and assumes the risks of a business or enterprise. An entrepreneur has been defined by various authors differently which have been attempted here under:

Entrepreneurs have strong beliefs about a market opportunity and are willing to accept a high level of personal, professional, or financial risk to pursue that opportunity and offer a new or existing product or service into an existing or a new untapped market. The prime motive is to create wealth and provide employment opportunities in the vicinity. An entrepreneur is also, a person who is willing and able to convert a new idea or invention into a successful innovation (Schumpeter, 1950).

Entrepreneurs are tough, pragmatic people driven by the need for independence and have a high need for achievement and they believe in self employment and do not submit themselves to authority (Collins & Moore, 1970). To others, entrepreneurship is all about taking risks and putting ones career and financial resources on the line of the idea being pursued by the entrepreneur and spending his/her time in an uncertain venture (Drucker, 1970 ; Knight , 1967).

Several researchers have focused on the personal characteristics and traits of the individual. The traits of the entrepreneur have been classified into psychological factors such as need for achievement, locus of control, propensity for risk and tolerance for ambiguity, and personality factors such as self confidence, opportunism and ambition (Jennings, 1994). Several authors have classified entrepreneurs based on important traits such as desire to achieve, hardworking, nurturing quality, accepting responsibility, reward orientedness and optimism (Burch, 1986).

Growth oriented firms are established by educated, bold and socially aware entrepreneurs who are adaptive, alert to environmental opportunities and readily achieve improvements in market size, product mix and production methods (Smith, 1967). A vast literature studying the entrepreneurial personality has found that certain traits seem to dominate in the case of entrepreneurs. The entrepreneur is primarily motivated by an overwhelming need for achievement and has a strong urge to build (McClelland, 1961). Many researchers on entrepreneurship are of the view that the personality profile of the entrepreneur can influence the type and size of their enterprises. These authors are also of the view that the size and growth prospects of entrepreneurship are influenced by the level of education, training, and the social awareness of the entrepreneurial ventures (Nwachukwu, 1990).

The second approach to entrepreneurship study is focusing on the attitude of the

entrepreneur. Attitude is a persistent tendency to feel and behave in a particular way towards some object. Attitudes are characterized in three ways: firstly, they tend to persist unless something is done to change them, secondly attitudes can fall anywhere along a continuum from very favorable to unfavorable and thirdly, attitudes are directed towards some object about which a person has feelings and beliefs.

Both personality and attitudes are complex cognitive processes. The main difference is that personality is usually thought of as the whole person, whereas attitudes may make up the personality. In the entrepreneurial context our attitude determines how we look at setbacks. To a positive thinker, it can be a stepping stone to success and to a negative thinker; it can be a stumbling block (Luthans, 2002).

Three factors which determine the attitude of an individual are environment; education and experience known as the triple Es (3Es) of attitude. The environment consists of home, school, work, cultural, religious background, traditions, beliefs, social environment and political environment. All of these have a direct bearing in the entrepreneurial context. In a positive environment, a marginal performer's output goes up. In a negative environment, a good performer's output goes down (Khera, 1998).

The results of a survey on entrepreneurial traits found that varying degrees of drive & energy, responsibility and optimism are required by the SSI entrepreneurs to develop a competitive edge and survive in the market place. Similarly the attitude was also studied and it was found that to be successful the SSI entrepreneurs must possess, a high level of persistence in problem solving, need for achievement, moderate risk taking attitude, must deal with failure in a proactive manner and they should not come under the negative influence of co- entrepreneurs (Shaw , Prasad & Haran, 2003).

The third approach to entrepreneurship study is focusing on the business skills of the entrepreneur. Some of the reasons identified for poor performances of the SSI units may be related to the business skills of the entrepreneurs: under and/or mismanagement, one man show, no competent professionals, informal procedures, weak reporting system, no planning and control and lack of marketing skills. Small business owner managers require a diverse range of skills. These include functional or task-based skills (such as marketing, accounts and administration abilities); strategic, analytical thinking and planning abilities; and people skills, both within and beyond the business.

Good management techniques, financial management, marketing strategies, motivational strategies for stakeholders and hiring the best are some of the tools for business success (Filey & Pricer, 1991). Strategic planning contributes to long running success for businesses (Costa, 1994).

Authors Dyke, Fisher and Reuben are of the opinion that management experience may be a significant factor in achieving success in the small business sector (as cited by Shonsey & Gulbro, 1998). Key success factors were managerial competence, innovation and creativity which were found in owner managers/ entrepreneurs (Chagnati, 1987).

According to Zetlin (as cited by Shonsey & Gulbro, 1998) there is a general feeling

among the entrepreneurs that having a good product is the most important factor for success but other means of achieving success is commitment to quality, being a customer centric organization, innovation in marketing strategies, maintaining good relationship with the customers, suppliers and hiring people who can be empowered.

A study by Lussier and Corman (as cited by Shonsey & Gulbro, 1998) has found that successful firms used better professional advisors than non successful ones. Variables used in their study were capital, recordkeeping, financial control, industry experience, planning, professional advisors, education, staffing, product/service timing, economic timing, age, partners, parents, minority owners and marketing.

According to Reid (as cited by Pasanen, 2005), many failure factors are related to products/services, customers, markets, and cooperation with other stakeholders. The greater the product range, the higher the probability that the firm will survive. Also, dependency on a single customer or only a few customers is a major factor affecting firm failure.

According to Sommers & Koc, Boyle & Desai and Lussier (as cited by Pasanen, 2005), the small business entrepreneurs were unable to attract and retain competent people and this may be one of the major reasons of failure associated with the small business sector. Other factors not identified by many researchers were procrastination, negative influence, stressed life, and ethical competition.

Research Design

The study is empirical in nature and information has been gathered across three study locations namely Ranchi, Jamshedpur and Bokaro districts of Jharkhand state to understand the different unresolved riddles in connection with the factors influencing business success and failures. Jharkhand is a state in eastern India. It was carved out of the southern part of Bihar state on 15 November, 2000 and there are twenty two districts. Jharkhand is famed for its mineral wealth and forestry products. The industrial city of Ranchi is its capital. Some of the other major cities and industrial centers are Jamshedpur, Bokaro, and Dhanbad that was once a part of West Bengal.

These cities were selected because most of the small scale industries of Jharkhand state are highly concentrated in these regions. In choosing the small scale units under this exercise, the consideration has been made on those SSI units where the government is encouraging, promoting and assisting their growth and viability.

Sampling Plan

While choosing the sample, a list of industries was prepared from the exhaustive list of the total number of SSI units existing in the study locations Ranchi, Jamshedpur and Bokaro. The list of the SSI units operating in these three locations were been obtained form the Directorate of Industries, government of Jharkhand. The list of industries pertains to the period 2004 -2005.

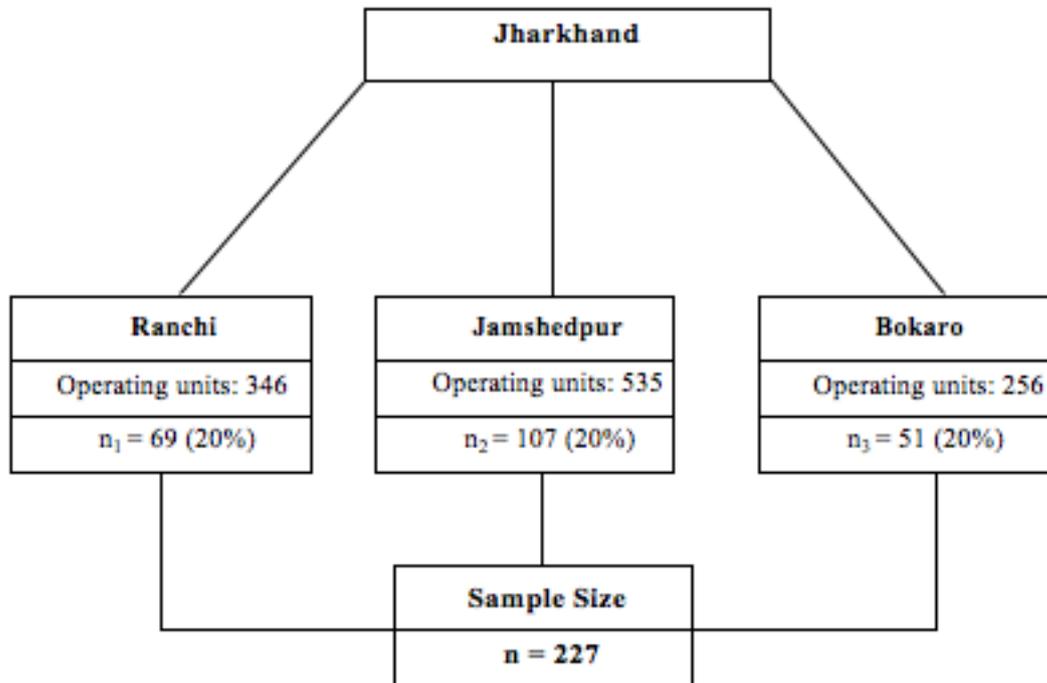


Figure 1: Distribution of samples across the study locations

Sample size

In Ranchi district the number of operating SSI units was 346, in Jamshedpur district it was 535 and in Bokaro district it was 256 respectively. The total number of SSI units in these industrial areas was 1137 which constituted the total population under the study. A sample has been drawn from each study location namely Ranchi, Jamshedpur and Bokaro which constitutes about 20 % of the total population. Thereby a total number of 227 sample SSI units were chosen under the study by adopting ‘Simple Random Sampling’ technique.

Data Collection

In gathering quantitative information a structured close ended questionnaire was used. The questionnaire used in the study constituted general profile of the entrepreneurs and data was collected on entrepreneurial traits, attitude, and business skills of the entrepreneurs that were influencing the success and failure of the sample business enterprises. In gathering the information under different heads and sub heads of the questionnaire, the statements have been arranged on a 5 - point “Likert Scale”. After finalization of the questionnaire, a pilot study was undertaken to test the appropriateness and standard of the questions brought under the data gathering tools. As per the field reality, the questionnaire was redesigned and finalized for the study. The comments and

suggestions of the respondents were incorporated in the final questionnaire.

Secondary data were also taken from brochures, pamphlets, reports, magazines and other government publications. These multiple sources of data collection were resorted to increase the validity and reliability of the study. The detailed description of the different heads under the final questionnaire has been mentioned here as follows:

The ten variables analyzed under entrepreneurial traits were: drive and energy, responsibility, persistence, self confidence, initiative, need for independence, tolerance for uncertainty, optimism, innovativeness & creativity and perseverance.

The thirteen variables analyzed under attitude were: long term commitment, persistence in problem solving, attitude to risk taking, dealing with failure, use of feedback, seeking assistance, flexibility, need for achievement, profit orientedness, integrity, resolving issues without procrastination, positive influence and self resolution of entrepreneurial stress.

The twelve variables chosen for analysis under business skills were: setting goals, developing business plans, delegating, dealing with work disputes, training subordinates, dealing with customers, dealing with government officials, keeping financial records, talent acquisition, marketing skills , catering to multiple customers and ethical competition.

Each statement has five categories of responses: strongly agree, agree, undecided, disagree and strongly disagree. The weights given to strongly agree, agree, undecided, disagree and strongly disagree were 5, 4, 3, 2 and 1 respectively.

Statistical Tools

Advanced statistical tools ANOVA, Multiple Regression and Discriminant Analysis were used in the present study. In calculating ANOVA, Multiple Regression and to develop the Discriminant Model, SPSS 12.0 package has been used. Simple descriptive statistical tools like percentages and means to compare the variables selected under entrepreneurial traits, attitude and business skills were also used.

Data Analysis and Interpretation

The health of the SSI enterprises was categorized under the heads: “Closed”, “Not Viable”, “Average”, “Good” and “Very Good” on a scale of 1 – 5. Those entrepreneurs who had cited the health of their enterprises as “Very Good” and “Good” were classified as “successful” entrepreneurs in the study whereas those entrepreneurs who were of the opinion that their performances were “Average” were classified under the category of “not so successful” entrepreneurs. Those SSI entrepreneurs who were of the opinion that their enterprises were “Not Viable” were considered as “unsuccessful” entrepreneurs in the study. The closed SSI units were not considered in the study.

Table: 1 Health of the sample enterprises in the study locations				
Health of the Unit	Study Locations			
	Ranchi	Jamshedpur	Bokaro	Total
Good (Successful)	21 (30.43%)	71 (66.35%)	13 (25.49%)	105 (46.25%)
Average (Not so successful)	43 (62.32%)	27 (25.24%)	26 (50.98%)	96 (42.29%)
Not Viable (Unsuccessful)	05 (7.25%)	09 (8.41%)	12 (23.53%)	26 (11.46%)
Total	69 (100.00%)	107 (100.00%)	51 (100.00%)	227 (100%)

Table: 1 Health of the sample enterprises in the study locations

The data in Table 1 shows that there are 105 SSI units whose health has been cited as “good”, 96 of the SSI units are “average” performers whereas 26 of the SSI units are “not viable”. The data pertaining to 26 “successful” and 26 “unsuccessful” entrepreneurs have been taken in the study to develop the Discriminant Model. For classification purposes “successful” entrepreneurs have been put under category 1 and the “unsuccessful” entrepreneurs have been put under category 2. Three predictor variables namely entrepreneurial traits, attitude and business skills of the entrepreneurs have been taken in the study to classify the entrepreneurs under these two categories.

Table: 2 Classification Results of Discriminant Analysis					
			Predicted Group Membership		
			1.00	2.00	Total
		Category			
Original	Count	1.00	25	1	26
		2.00	1	25	26
	%	1.00	96.2	3.8	100.0
		2.00	3.8	96.2	100.0

Table: 2 Classification Results of Discriminant Analysis

From the classification matrix as represented by Table 2, it can be inferred that the Discriminant Function obtained from the study was able to classify 96.2% of the 52 objects correctly. It also, shows that out of 26 cases predicted to be in Group - 1, 25 were observed to be Group I and 1 in Group -2. Similarly for Group -2, out of 26 cases predicted to be in Group -2, 25 were found to be in Group -2 and 1 in Group -1. Thus on the whole 2 cases out of 52 cases were misclassified by the Discriminant Model, thus giving a classification (or prediction) accuracy level of 96.2%.

Table: 3 Statistical Significance of the Model				
Test of Function(s)	Wilks Lambda	Chi-Square	df	Sig.
1	0.176	84.370	3	.000

Table: 3 Statistical Significance of the Model

The value of Wilk’s Lambda ranges between 0 and 1 with a lower value indicating better discriminating power of the model. The magnitude of Wilk’s Lambda as observed from Table 3 stands at 0.176 which is very good; being close to 0 and less than 0.5 suggests that the Discriminant Model has very good discriminating power. The probability value $p = 0.000$ of Chi Square test is less than the value of $\alpha = 0.05$ which again reinforces good discriminating power of the model.

Table: 4 Standardized Canonical Discriminant Function Coefficients	
	Function
	1
E_Traits	.751
Attitude	-.059
B_Skills	.647

Table: 4 Standardized Canonical Discriminant Function Coefficients

The values of the Standardized Canonical Discriminant Function Coefficients as observed from Table 4, for the three predictor variables were: entrepreneurial traits (0.751) followed by business skills (0.647) and attitude (- 0.059). The Standardized Canonical Discriminant Function Coefficients suggests that the variables entrepreneurial traits (0.751) and business skills (0.647) are better predictor between “successful” and “unsuccessful” entrepreneurs.

Table: 5 Canonical Discriminant Function Coefficients	
	Function
	1
Traits	1.856
Attitude	-.124
B_Skills	1.821
(Constant)	-12.140

Table: 5 Canonical Discriminant Function Coefficients

To classify a prospective entrepreneur under the two categories, data pertaining to Un-standardized Canonical Discriminant Function (Table 5) was used. The Discriminant Function obtained was $D = -12.140 + 1.856X_{\text{traits}} - 0.124X_{\text{attitude}} + 1.821X_{\text{businessskills}}$. “Successful” entrepreneurs were classified under category 1.00 and “Unsuccessful” entrepreneurs were classified under category 2.00. The Discriminant Score (D) for a prospective entrepreneur can be obtained by inputting data from the Self Rating Form designed for the Discriminant Model.

The Self Rating Form measures the perception of the entrepreneur on the three predictor variables namely entrepreneurial traits (10 variables), attitude (13 variables) and business skills (12 variables).

	Function
Category	1
1.00	2.125
2.00	-2.125

Table: 6 Functions at Group Centriods

From Table 6, the Functions at Group Centriods for category 1.00 was + 2.125 and for category 2.00 it was – 2.125. “Successful” entrepreneurs have been classified under category 1.00 and “Unsuccessful” entrepreneurs under category 2.00.

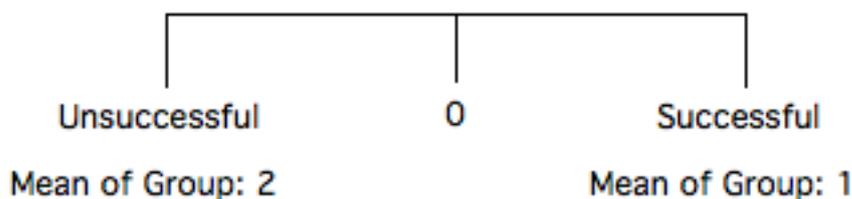


Fig: 2 Decision rule for classifying prospective entrepreneurs

If the discriminant score of any potential entrepreneur falls to the right of the midpoint, he/she will be classified as a “successful” entrepreneur and if it falls to the left of the midpoint, he/she will be classified as an “unsuccessful” entrepreneur.

Conclusion

The Discriminant Model developed herein can be used by banks, financial institutions and sponsoring agencies for screening potential entrepreneurs. It will help banks, financial institutions and sponsoring agencies to classify the entrepreneur in terms of

his/her inherent entrepreneurial traits, attitude and business skills under two categories namely “successful” and “unsuccessful” entrepreneur. This assessment will help the banks and financial institutions to get a fair picture whether the prospective entrepreneur will be successful in his/her venture or not?

The application of the Discriminant Model implies that the prospective entrepreneur will have to fill a Self Rating Form which has been designed based on literature review for the three predictor variables namely entrepreneurial traits, attitude and business skills. The mean for these predictor variables shall be entered in the Discriminant Model and finally a discriminant score will be obtained. The discriminant score so obtained from the Discriminant Model and by the use of Functions at Group Centroids, the entrepreneur will get classified under any of the two categories namely “successful” or “unsuccessful” entrepreneur.

If the prospective entrepreneur gets classified under the category of “unsuccessful” entrepreneur, an analysis of the predictor variables is desired to identify the serious deficiencies in his/her entrepreneurial traits, attitude and business skills. An analysis of the deficiencies will help the banks, financial institutions and sponsoring agencies to assess whether the deficiencies can be removed through training or some other intervention/(s)? If the deficiencies are found to be very serious in nature then these agencies will be in a position to decide not to finance the entrepreneur. It will help banks and financial institutions to finance the right kind of entrepreneurs who have the potential for success and thereby reducing the chance of loans becoming Non Performing Assets.

References

- Burch, J. G. (1986). *Entrepreneurship*. New York: John Wiley & Sons.
- Chagnati, R. (1987). Small Business Strategies in different Industry Growth Environments. *Journal of Small Business Management*, 25, 61 -68.
- Collins, J. & Moore, D. (1970). *The Organization Makers*. New York: Appleton-Century-Crofts.
- Costa, S. (1994). 100 years and accounting. *Management Review*, 83(12), 297 – 312.
- Drucker, P. (1970). Entrepreneurship in Business Enterprise, *Journal of Business Policy*, 1, 3 – 12
- Filey, A. & Pricer, R. (1991). *Growing Companies: Tools for Small Business Success*. Madison, USA: Magna Publications Inc.
- Jennings, D. F. (1994). *Multiple Perspectives of Entrepreneurship: Text, readings and Cases*, Cincinnati, Ohio: South Western Publishing.
- Khera, S. (1998). *You Can Win*. India: McMillan India Ltd.

- Knight, K. (1967). A descriptive model of the intra-firm innovation process. *Journal of Business of the University of Chicago*, 40(4), 478 – 496.
- Luthans, F. (2002). *Organizational Behavior*. Singapore: Irwin McGraw Hill.
- McClelland, D. (1961). *The Achieving Society*. Princeton, NJ: D Van Nostrand.
- Mitra, R. & Pingali, V. (1999). Analysis of Growth Stages in Small Firms: A Case Study of Automobile Ancillaries in India. *Journal of Small Business Management*, 37, 62 – 75.
- Nwachukwu, C. C. (1990). *The Practice of Entrepreneurship in Nigeria*. Onisha, Nigeria: Africana FEP Publishers Ltd.
- Pasanen, M. (2005). Tracking Small Business Failure Factors and Trajectories. In F. Welter (Ed), *Challenges in Entrepreneurship and SME Research* (pp 93 -113). Turku, Finland: Council for Small Business and Entrepreneurship.
- Reddy, P. K. (2002). A comparative study of Non Performing Assets in India in the Global context – similarities and dissimilarities, remedial measures. Retrieved October 8, 2007, from Web site: <http://www.crisil.com>
- Schumpeter, J. (1950). *Capitalism, Socialism, and Democracy*. New York: Harper and Row.
- Shaw T, Prasad, A & Haran, H (2003, April 18-19). Developing Competitive Edge by SMEs. *Proceedings of Eastern Regional Convention of ISTD, Ranchi Chapter*, 60-65.
- Shonsey, L. & Gulbro, R. D.(1998). *Small Business Success: A Review of the Literature*. Retrieved November 15, 2007, from Web site: <http://www.sbaer.uca.edu>
- Smith, N. R. (1967). The Entrepreneur and His Firm. *Bureau of Economic Research*, 29, 562 – 585.

Web Sources

- www.indiabudget.nic.in/ “Industrial Sickness”
- www.oecd.org/ “SMEs and Entrepreneurship, About”
- www.smallindustryindia.com/ “Sickness in SSI Sector – Problems and Prospects”

Tarak Nath Shaw (2008) A Discriminant Model for Assessment of Prospective Entrepreneurs for Financing and Success of Entrepreneurial Venture. *Journal of Asia Entrepreneurship and Sustainability*, (4)1, 69-82

Human Capitals make Entrepreneur more Entrepreneurial? An Empirical Data from Small and Medium Enterprises in Malaysia

Jeen Wei Ong¹, Hishamuddin Bin Ismail²

Faculty of Business and Law

Multimedia University

¹Email: jwong@mmu.edu.my; Tel: +606 252 3768

²Email: hisham@mmu.edu.my; Tel: +606-252 3642

Abstract

Human capital theory has gained attention in entrepreneurship study. Recently, Westhead, Ucbasaran, and associates' works have enhanced the interest on the effect of human capitals on entrepreneurialism of the entrepreneurs. However, as exploratory efforts, their studies seemed to be covering limited dimensions of human capitals and entrepreneurship. Building on their works, this study looks into entrepreneurial experience, industrial experience, managerial experience, and education level of the entrepreneurs, as well as differences among novice, serial, and portfolio entrepreneurs in term of their entrepreneurship. Entrepreneurship in this study includes personality traits, social competence, cognitive traits, and the strategic capabilities of small and medium enterprises (SMEs). Primary responses from the entrepreneurs in SMEs are collected through questionnaire. 365 usable responses were obtained. Analysis of the data using SPSS version 15 indicated that education level of the entrepreneurs rather than experiences are the critical factor in determining the level of entrepreneurship. From the findings, policy makers are recommended to strengthen the education level of entrepreneurs in order to strengthen the entrepreneurship development in the country to ensure sustainable future and development of SMEs.

Introduction

Recently, human capitals, which measure the experiences and education level of the entrepreneurs (Rauch & Frese, 2000) have captured research attention, especially after the publishing of a series of papers by Westhead, Ucbasaran, and their associates (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005). Rather than focusing on the impact of the human capitals of entrepreneurs on performance of the firm, they distinguished their works by focusing on the effect of human capitals on the behaviour of the entrepreneurs. The approach of this group of researchers has given the solution to the problem on level of analysis. In previous approach, independent variable that is the human capitals of the entrepreneur focus on individual as level of analysis while dependent variable that is the performance of the firm has taken the organisational level as level of analysis. Although this might be the common approach in entrepreneurship studies (e.g. Dyke, Fischer & Reuber, 1992; Lee & Tsang, 2001; Haynes, 2003), technically, the accuracy of this approach is questionable. Besides that, pervious studies did not seem to have provided a conclusive answer on the role of entrepreneur's human capitals on performance of the firm (see for Dyke et al., 1992; Lee & Tsang, 2001; Haynes, 2003; Jaafar & Abdul-Aziz, 2005). Thus, the studies of Westhead, Ucbasaran and associates might have opened a new direction to study the role of entrepreneur's human capitals in entrepreneurship stream of research.

A closer review on the four papers published by Westhead, Ucbasaran, and associates indicates a wide area for extending the idea into wider area of interest. Previous studies have highlighted the background and experiences of the entrepreneurs as influential factors to determine the entrepreneurialism of the entrepreneurs (Rauch & Frese, 2000; Llewellyn & Wilson, 2003). However, in Westhead, Ucbasaran, and associates studies, they only focused on entrepreneurial experience that is to categorised the entrepreneurs into novice entrepreneur, serial entrepreneur, and portfolio entrepreneur to analysed the significant of differences among them towards various entrepreneurship dimensions (see for Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005). Other critical dimensions in measuring the human capitals of the entrepreneurs such as industrial experience, managerial experience, and education level of the entrepreneurs (Dyke et al., 1992; Lee & Tsang, 2001; Haynes, 2003) have yet to be analysed. In addition, these studies have only covered mainly the opportunity identification, development, and organisational capabilities of the entrepreneurs as measure for entrepreneurship. Even opportunity has been a very crucial part of entrepreneurship (Venkataraman, 1997; Shane & Venkataraman, 2000; Ardichvili & Cardozo, 2000; Alvarez & Busenitz, 2001; Dimov, 2003; Eckhardt & Shane, 2003; Alsos & Kaikkonen, 2004; Baron, 2004; Van Gelderen, 2004; Liu, 2006; Sanz-Velasco, 2006), entrepreneurship mean more than that. This study in extra looks into personality traits (Green, David, Dent & Tyshkovsky, 1996; Littunen, 2000; Littunen & Storhammar, 2000; Rauch & Frese, 2000; Korunka, Frank, Lueger & Mugler, 2003; Beugelsdijk, 2007), social skill (Baron,

2000; Baron & Markman, 2000, 2003), and ability of firm in capitalising the flexibility and adaptability to benefit from accidental discovery within the firm and changes in the environment (Ma, 2002) as measure of entrepreneurship. Thus this study will provide comprehensive evidence on the effect of human capitals on entrepreneurialism of the entrepreneurs in order to answer the question “do human capitals make entrepreneur more entrepreneurial?”.

Review of Literature

Entrepreneurship stream of research has developed significantly over the year, but, thus far, there have no generally acceptable definitions of the term entrepreneurship itself (see for Cunningham & Lischeron, 1991; Venkataraman, 1997; Green et al., 1996; Shane & Venkataraman, 2000; Llewellyn & Wilson, 2003). In view of this, Gartner (1989) requested the researchers to provide own definition of entrepreneurship in respective study. This study defines entrepreneurship as examination of the quality of owner-manager in becoming the strategic resource thus generating strategic capabilities for improving the competitiveness of the firm. This definition is broader than Venkataraman (1997) and Shane and Venkataraman (2000) definition of entrepreneurship.

In distinguishing entrepreneurs from small business owners, Carland J. W. Hoy, Boulton, and Carland J. A. C. (1984) highlighted innovation, need for achievement, internal locus of control, need for independence, need for responsibility, and need for power as crucial characteristics associated with entrepreneurs. Following the bubble of personality traits in entrepreneurship study (Llewellyn & Wilson, 2003), only need for achievement, internal locus of control, and risk taking propensity survived as entrepreneurial traits (Littunen, 2000; Rauch & Frese, 2000; Korunka et al., 2003; Beugelsdijk, 2007). However, previous studies argued risk propensity as more associated with ownership of the business rather than entrepreneurship (e.g. Schumpeter, 1934; Brockhaus, 1980; Carland et al., 1984). Recently, cognitive approach (Venkataraman, 1997; Shane & Venkataraman, 2000; Alvarez & Busenitz, 2001) and social competence (Baron, 2000; Baron & Markman, 2000; 2003) emerged as another promising stream of entrepreneurial traits (Baron, 2000). In addition to the trait factors, researchers have also recognised flexibility as another competitive strength for small and medium enterprises (SMEs) (Yu, 1999; Fiegenbaum & Karnani, 1991; Wicks, 2005). Thus, entrepreneurship in this study includes this strategic capability of the firm as well.

Need for Achievement

Need for achievement is developed by McClelland (1961) to study motivational bases of human behaviour (Spangler, 1992). Persons with a high need for achievement tend to set demanding targets for themselves and are proactive and bold in setting about accomplishing objective (Beugelsdijk, 2007; Cromie, 2000; McClelland, 1961). They tend to have preference over challenging tasks of moderating difficulty rather than take personal responsibility for one performance, seek feedback on performance, and look

for new and better ways to improve their performance (Rauch & Frese, 2000). Thus, need for achievement is always been associated with entrepreneurship (Lee, 1997; Littunen, 2000; Rauch & Frese, 2000; Gürol & Atsan, 2006).

Internal Locus of Control

Locus of control developed by Rotter (1966), on the other hand, measures extend to which people feel in charge (Beugelsdijk, 2007). Individuals who believes in control over one's own life by influencing the outcomes through one's behaviour, permanent characteristics, skills, ability and effort is said to have internal locus of control (Kaufmann, Welsh & Bushmarin., 1996; Littunen, 2000; Littunen & Storhammar, 2000; Twenge, Zhang, & Im, 2004). Individuals with an external locus of control are said to believe in external forces such as actions of others, fate, luck, chance or other factors that are beyond their control to have control over the outcome (Kaufmann et al., 1996; Dollinger, 1999; Littunen., 2000; Littunen & Storhammar, 2000). The interest in entrepreneurship study is on internal locus of control whereby the internal locus of control has always been associated with entrepreneurs and entrepreneurial activity (Pandey & Tewary, 1979; Kaufmann et al., 1996; Mazzarol, Volery, Doss & Thein, 1999; Lee & Tsang, 2001).

Social Competence

Social competence is a crucial element in running a business (see for Borch, Huse & Senneseth, 1999; Park & Luo, 2001; Greve & Salaff, 2003; Jaafar & Abdul-Aziz, 2004), especially for SMEs (Jones, 2003). Thus, the social network and capability of the entrepreneur in forming and managing network relationship is crucial (Taylor & Pandza, 2003). In fact, the social network for SMEs is highly depending on the personal network of the entrepreneur (Dollinger, 1999; O'Donnell, Gilmore, Carson & Cummins, 2002; Taylor & Pandza, 2006). Therefore, social competence of the entrepreneur, which measure effectiveness of the entrepreneur in interacting with others is important in predicting the long term success of the firm (Baron & Markman, 2000) since the social network required by firm change over time (Greve & Salaff, 2003). Thus, the capability to build and manage the social capital of the firm determines the quality of entrepreneur to be strategic resource for the firm.

Opportunity Sensitivity

Venkataraman (1997) and Shane and Venkataraman (2000) definition of entrepreneurship as the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited, has strengthen the cognitive trait in entrepreneurship study. The development of this stream of study can be retrieved back to the Austrian Market Process (e.g. Schumpeter, 1934; Kirzner, 1973). Scholars in resource-based view have mainly focused on the cognitive of the

entrepreneur in discussing the role of entrepreneurship as strategic resource of the firm (e.g. Alvarez & Busenitz, 2001; Mathews, 2002; Akio, 2005; Ishikawa, 2006; Liu, 2006). This is because opportunity has been identified as the basic for entrepreneurship (Venkataraman, 1997). In this study, the cognitive trait is termed as opportunity sensitivity that is to measure the sensitivity of the entrepreneur in identifying, evaluating and developing the opportunity. Thus, opportunity sensitivity is a process of innovation, which has been listed as the first factor to distinguish entrepreneur from small business owner by Carland et al., 1984).

Luck

Flexibility and adaptability of SMEs has been identified as the strength of the firm (Yu, 1999; Fiegenbaum & Karnani, 1991; Wicks, 2005). However, in static environment, firm will gain from efficiency of operation to trade off with the flexibility (Grant, 1991) in order to be benefited from economic of scale. This is because stability in the environment does not require firm to response to uncertainty. Oppositely, in the dynamic environment, where the environment is more uncertain, flexibility and adaptability of the firm are important (Fiegenbaum & Karnani, 1991; Pil & Holweg, 2003; Wicks, 2005). These strategic capabilities give SMEs greater ability to response to environment and organisation routine (Wicks, 2005), adjust output of the firm to match the fluctuation in demand (Fiegenbaum & Karnani, 1991), and spot and response to new customer's demand. Therefore, it is logic to conclude that flexibility and adaptability can only be turned into the organisation strength under uncertainty. Since uncertainty is not predictable, thus the concept of luck or serendipity is very much applicable (Ma, 2002).

For clarification, luck in this study does not referring to purely lucky events. Rather, luck is defined as the capability of the firm to gain benefit from unpredicted events due to greater alertness, flexibility, and adaptability of the firm. Therefore, this study examine characteristic of the firm to determine the likelihood for firm to gain luck from the perspective of flexibility, alertness, adaptability, and rewarding creativity (Fine & Deegan, 1996; Koenig, 2000; Ma, 2002; Denrell, Fang, & Winter, 2003; Foster & Ford, 2003; Cunha, 2005).

According to the framework developed by Ma (2002), can be resultant from internal accidental discovery within the organisation or from uncertainty in the environment in which firm operates. Internally, firm can potentially gain from useful weeds and skunk works (Ma, 2002). To do this, a firm has to encourage innovation and creative works that can possibly create luck for the firm by maintaining flexibility in organisational structure that allow employees for self-initiated actions, experimentations, improvisation, encouragement for employees to take risk, tolerating mistakes and errors, and rewarding employees for their creativity. To be benefited from these activities, the firm has to be proactively alert on these potential lucks and seek opportunity to commercialise them (Ma, 2002). Externally, a firm can potentially induce luck through possession of asymmetric information and unique historical events by staying alert to changes in social cultural trends, technology, customer taste and demand, and government

regulatory, faltering competitors, and becoming a dream expeditor (Ma, 2002).

Entrepreneur's Human Capital

Human capital measure individuals' knowledge and experiences (Rauch & Frese, 2000). Human capital can determine the quality of an entrepreneur (Dollinger, 1999) and make individual more efficient in organising processes and in attracting customers and investors (Rauch & Frese, 2000). In this study, the interest of entrepreneur's human capital is the education and experiences. Education level measures academic qualification of the entrepreneurs. Various scholars such as Praag (1996), Lee and Chan (1998), Lee and Tsang (2001), and Casson (2005) have discussed the important of the education background towards entrepreneurship. Experiences of the entrepreneurs can be segregated mainly into managerial experience, industrial experience, and entrepreneurial experience (Lee & Tsang, 2001). Westhead, Ucbasaran and associates (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005) have extended the entrepreneurial experience to examine the differences between novice, serial, and portfolio entrepreneurs.

Experience can generally be defined as events that occur in an individual's life that are perceived by the individual (Quiñones, Ford & Teachout, 1995). In the perspective of entrepreneur, experience is mainly made up of entrepreneurial experience, managerial experience, and industrial experience (Lee & Tsang, 2001). Entrepreneurial experiences concerns about the number of previous start-up and the management role played in such ventures (Stuart & Abetti, 1990; Lee & Tsang, 2001; Haynes, 2003). Industrial experience refers to the experience in the same industry as the current business venture. Managerial experience, on the other hand, is the total experience in holding managerial position regardless of the industry in which the experiences are gained (Lee & Tsang, 2001).

Extending on the entrepreneurial experience, studies have been focusing on novice, serial, portfolio, and habitual entrepreneurs (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005). Novice entrepreneur refers to self-employed individual without entrepreneurial experience while those with experience are known as habitual entrepreneur. Habitual entrepreneur can be further segregated into serial entrepreneur, who are self-employed individual with entrepreneurial experience but has ceased from the previous business, and portfolio entrepreneur, self-employed individual owning a stake in more than one business ventures. Business ownership can be acquired through founding, inheriting or purchasing majority or minority stake in a business venture (Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005).

Effects of Entrepreneur's Human Capital on Entrepreneurship

The background and experiences, which is the human capital of the entrepreneur, are crucial in entrepreneurship study since they might affect the probability of an individual to act entrepreneurially (Rauch & Frese, 2000; Llewellyn & Wilson, 2003). In discussion of entrepreneurship as strategic resources according to the framework of resource-based view (Barney, 1991; Peteraf, 1993), Alvarez and Busenitz (2001) have recognised previous learning and knowledge of the entrepreneur enable entrepreneur to generate heterogeneity in the firm through converting homogenous input into heterogeneous output, ability to be an opportunity exploiter in acquiring resources (Alvarez & Busenitz, 2001), and ability to arrange the resources into action (Akio, 2005). Previous learning and knowledge are acquired through either experiences or education of the entrepreneurs.

Association between education and entrepreneurship is inconclusive. Education level of individual is found to be positively correlated with entrepreneurship and success (Lee, 1997; Casson, 2005). According to Lee (1997), university level of education affect need for achievement since success in university level of education enhances confidence of the individual to seek greater challenges and recognitions. However, the relationship between entrepreneurial talent and year of schooling is not linear. An intermediate level of education in vocational school with highest education in science stream appears to build most entrepreneurial talent (Praag, 1996). A contradictory finding suggests that university graduates are less likely to venture into entrepreneurship career compared to those secondary school drop-outs (Lee & Chan, 1998). Lee and Tsang (2001) finding indicate that education level of the entrepreneur is crucial in situation where highly complexity and greater need for planning and knowledge.

Experience with previous firms can be in term of industrial experience and managerial experience (Dyke et al., 1992). Both industrial experience and managerial experience can enhance an individual's capability to identify and exploit opportunity (Haynes, 2003; Casson, 2005). Besides, industrial experience would strengthen the entrepreneur's decision in selecting resources (Hart, Stevenson & Dial, 1995) to build the core competency for the firm (Haynes, 2003). All these will potentially make entrepreneur more entrepreneurial and more strategic in making decision. However, the risk of industrial experience is entrepreneur tend to follow known models in problem solving and are less adaptive to new environment (Haynes, 2003). If this is the consequence, obviously the entrepreneurship in the firm is greatly discounted.

Entrepreneurial experience has been highly discussed in previous literature in entrepreneurship in its contribution towards entrepreneurialism of the individual entrepreneur (e.g. Stuart & Abetti, 1990; Lee & Tsang, 2001; Haynes, 2003; Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005). Evident from previous studies have shown the differences among entrepreneurs with different level of entrepreneurial experience. Entrepreneurial experience can affect the behaviour in searching and developing opportunity and resources owned by the entrepreneur (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink,

2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005). Habitual entrepreneur, especially portfolio entrepreneurs with accumulated entrepreneurial experiences in term of skills, competencies, and resources are better able to obtain equity stake in subsequent ventures because they are more optimistic and opportunistic (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003). Thus, greater level of entrepreneurial experience make entrepreneur more entrepreneurial.

From the arguments above, the following research framework is formulated to testify the effect of entrepreneur’s human capitals on entrepreneurship.

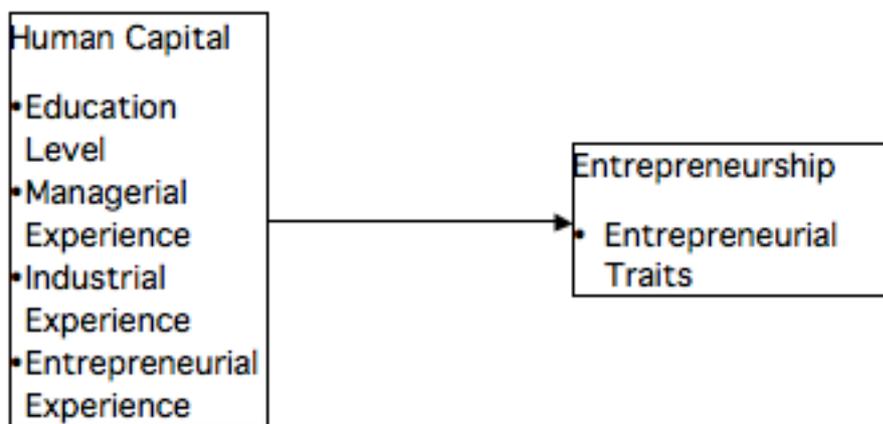


Figure 1: Research Framework

Research Methodology

Questionnaire Development

Questionnaire is developed to empirically examine the research framework and thus to provide an answer to the research question. Table 1 below indicates the variables in entrepreneurship. Questionnaire for need for achievement, locus of control, and social competence are adapted from previous studies as indicated in the table. The instrument for opportunity sensitivity and luck are self develop since the available published instrument does not fully fit the concept intended to be measured in this study. Thus, the instrument is constructed by referring to the sources of literatures as indicated in the table 1. All the items in these concepts are measured using 6-point Likert Scale ranging from strongly disagree to strongly agree.

Constructs / Concepts	Operational Definition	Sources of questionnaire
Need for Achievement	Reflects a person’s need to strive hard to attain success	Green (1973).

Locus of Control	Measures the extend to which people feel in charge and able to influence over the outcome	Kaufmann et al (1996); Levenson (1974, 1981).
S o c i a l Competence	Measures individual social perception, social adaptability, expressiveness, and impression management	Baron and Markman (2003).
Opportunity Sensitivity	Measures individual ability in identifying, evaluating, and exploiting an opportunity	Ardichvili & Cardozo (2000); Ardichvili, Cardozo & Ray (2003), Eckhardt & Shane (2003); Pech & Cameron (2005); Sanz-Velasco (2006); Schwartz, Teach, & Birch (2005); Shane & Venkataraman (2000); Stevenson & Jarillo (1990); Ucbasaran, Westhead, Wright, & Binks (2003); Ucbasaran, Wright, & Westhead (2003); Westhead, Ucbasaran, & Wright (2005); Westhead, Ucbasaran, Wright, & Binks (2005).
Luck	capability of the firm to gain benefit from unpredicted events due to greater alertness, flexibility, and adaptability of the firm	Cunha (2005); Fine & Deegan (1996); Ma (2002).

Table 1: Sources of questionnaire for entrepreneurship

The instrument for the independent variables that is entrepreneur's human capital is measured using nominal scale. Instrument for education level of the entrepreneur measures require the entrepreneur to select their highest level of education. The choices include no formal education, primary and secondary level, professional certification, diploma and degree, and postgraduate. For managerial experience, industrial experience, and entrepreneurial experience, the entrepreneurs need to indicate whether they have the relevant experience. Therefore, the nominal scale is used to segregate the entrepreneurs into the group with and without the relevant experience. Lastly, following the approach of Westhead, Ucbasaran, and associates (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005), the entrepreneurs are segregated into novice, serial, and portfolio entrepreneurs according to their entrepreneurial experience

and number of business currently owned. Novice entrepreneur is entrepreneur without previous business ownership experience and currently only own one business. Serial entrepreneur is individual with previous entrepreneurial experience but has ceased from previous venture and currently only own one business. Portfolio entrepreneur is the entrepreneur has ownership in more than one business currently.

Measure of goodness for the instrument

The instrument developed is sent for expert review for face validity. The experts are made up of Doctorate degree holders and Doctorate degree students in the related field of research interest. Expert review is very important for initial validity of the instrument especially for the self develop instrument. Then, the questionnaire is sent for pilot study. The questionnaire is sent to entrepreneurs funded by Centre of Commercialisation and Technoprenuer Development (CCTD) of Multimedia University and entrepreneurs parked under Incubator of Knowledge Economy, Malacca. 22 responses were collected and analysis of internal consistency indicated the reliability of the instrument for each of the variable as the Cronbach's Alpha value for all the concepts is higher than 0.70 (Llewellyn & Wilson, 2003).

Sampling Plan and Data Collection Method

The unit of analysis in this study is the individual entrepreneur. Entrepreneur is defined as the owner-manager, which is individual who owns majority ownership and actively involve in management of the firm (Brockhaus, 1976; Littunen, 2000). Thus the population of the study is all the independent owner managers in SMEs in Malaysia. The sample for this study is mainly drawn from SMEs in Klang Valley, participants in trade exhibitions, and listed enterprises in the Multimedia Development Corporation Sdn. Bhd. (MDeC) database.

In view of the low response rate from previous studies in Asia countries, non-probability sampling is preferable over probability sampling in study of SMEs. It is hard to obtain a truly representative, up-to-date, and comprehensive sample of SMEs in Malaysia (Sulaiman & Hashim, n.d.). Acquiring the list for sampling from government associations like SMIDEC, Department of Statistics, Ministry of International Trade and Industry, and Federation of Malaysian Manufacturer represents bias to the other SMEs that are not registered with these associations (Sulaiman & Hashim, n.d.). SMEs that are not registered with those bodies might have different characteristic.

The primary responses from the entrepreneurs in SMEs are obtained through several methods. First, email is used to contact the Malaysian independent entrepreneurs in MDeC database with contact information. Total of 2572 entrepreneurs were contacted through personal email with only 1575 of the emails have successfully reached the targeted respondents. With a follow up email, 152 usable responses were collected, which represents about 10% effective response rates. Approximately another 500 entrepreneurs were approached face-to-face through personal visit to their business

premises in Klang Valley and various trade exhibitions. Through these methods, another 204 usable responses or about 40% response rate were elicited. This make up the final usable responses to 365.

Data Analysis

The primary data collected is analysed using SPSS version 15. ANOVA is used to examine the significance of different among entrepreneurs with different level of education on entrepreneurship. This is because education level of entrepreneur is measured using nominal scale and more than two categories of education levels are available. Significance of different between entrepreneurs with and without managerial experience, industrial experience, and entrepreneurial experience is tested through independent sample t-test. Independent sample t-test enables empirical comparison between entrepreneurs with and without the relevant experience on the degree of entrepreneurialism of the entrepreneurs themselves as well as the entrepreneurship of the firm. Finally, entrepreneurs are segregated into the group of novice entrepreneur, serial entrepreneur, and portfolio entrepreneur according to their entrepreneurial experience and number of business currently own.

Frequency analysis is conducted to study the background of the respondents in this study. Table 2 indicates the profile of the respondents according to respective type of human capital. Table 3, table 4, and table 5 indicate the statistical analysis of the impact of human capitals on entrepreneurship.

Variable	Frequency	Percentage	
Industrial Experience	Yes	319	88.1
	No	43	11.9
Managerial Experience	Yes	278	76.8
	No	84	23.2
Entrepreneurial Experience	Yes	142	39.6
	No	217	60.4
Type of Entrepreneur	Novice	53	14.8
	Serial	125	34.9
	Portfolio	180	49.3
Education Level	No Formal Education	5	1.4
	Primary or Secondary	83	22.8
	Professional Certification	33	9.1
	Diploma or Degree	188	51.5
	Post-graduate	55	15.1

Table 2: Background information on human capitals of the respondents

From the frequency analysis on the background of the entrepreneurs, majority of the respondents have work in related industry as their current business venture (88.1%) and holding managerial role in their previous job (76.8%). However, only 39.6 percent of the respondents have entrepreneurial experience. Further segregation of the entrepreneurs into novice, serial and portfolio entrepreneurs found that 14.8 percent of them are novice entrepreneurs (no entrepreneurial experience and currently own only one business), 34.9 percent of them are in the category of serial entrepreneur (with entrepreneurial experience and currently own only one business), while another 49.3 percent are portfolio entrepreneur (currently own more than one business). From their level of education, majority of the respondents are found to have high level of education with 51.5 percent of them have diploma or degree, 15.1 percent with post-graduate qualification, and another 9.1 percent have professional qualification.

	Managerial Experience	Industrial Experience	Entrepreneurial Experience				
	t	Sig.	t	Sig.	t	Sig.	
Need for achievement	1.074	0.282	-0.352	0.725	2.064	0.040	
Internal Locus of Control	2.657	0.008	0.898	0.370	0.984	0.326	
Opportunity Sensitivity	Identification	2.102	0.036	-0.259	0.796	0.560	0.576
	Evaluation	0.667	0.505	-0.416	0.678	1.868	0.063
	Development	0.723	0.470	-1.232	0.219	0.727	0.467
Social Competence	Perception	0.608	0.544	0.897	0.370	-0.141	0.888
	Adaptability	1.078	0.283	-0.807	0.420	1.119	0.264
	Expressiveness	-1.403	0.162	-0.354	0.725	0.184	0.854
Strategic Capability	Endogenous Luck	1.332	0.184	-1.237	0.217	-0.823	0.411
	Exogenous Luck	1.623	0.105	-0.960	0.338	-0.367	0.714

Table 3: Independent sample t-test for impact of experiences on entrepreneurship

Table 3 shows the results of independent sample t-test for the impact of managerial experience, industrial experience, and entrepreneurial experience of the entrepreneurs on entrepreneurship. The respondents are divided into two categories, which are category with respective experience and category without the experience. Independent sample t-test is used to test the significance difference between these two categories of entrepreneurs in term of entrepreneurship.

From the results, managerial experience is found to have significance impact on internal locus of control ($t=2.657$; $p<0.05$) and opportunity identification ($t=2.102$; $p<0.05$). Entrepreneurs with experience in holding managerial position are more confidence with their own capabilities in influencing the outcome of their efforts and are stronger in identifying opportunity around them. Entrepreneurs with managerial experience also found to have higher mean score in all the dimensions in entrepreneurship except for expressiveness in social competence. However, the differences are not statistically significance.

Industrial experience seems to have negative impact on entrepreneurship. Although not statistically significance, entrepreneurs with experience working in the similar industry as their current business venture are found to be weaker in need for achievement, opportunity identification, opportunity evaluation, opportunity development, social adaptability, expressiveness, endogenous luck, and exogenous luck. They are only found to score higher in internal locus of control and social perception but not statistically significance.

On the other hand, experience as entrepreneur prior to current business venture is found to have strengthened the achievement need of the entrepreneurs ($t=2.064$; $p<0.05$). Entrepreneurial experience has also existed to build stronger internal locus of control, opportunity identification, opportunity evaluation, opportunity development, social adaptability, and expressiveness but not statistically significance. However, not statistically significance, entrepreneurial experience has also found to make entrepreneurs weaker in social adaptability, endogenous luck, and exogenous luck.

	F	Sig.	Type of Entrepreneurs			
			Novice	Serial	Portfolio	
Need for Achievement	0.789	0.455	4.869	4.760	4.862	
Internal Locus of Control	1.086	0.339	5.113	5.005	4.957	
Opportunity Sensitivity	Identification	0.460	0.632	5.119	5.108	5.176
	Evaluation	1.034	0.357	5.094	5.007	4.940
	Development	0.268	0.765	4.948	4.918	4.873
Social Competence	Perception	0.208	0.812	4.400	4.331	4.386
	Adaptability	0.702	0.496	4.524	4.486	4.599
	Expressiveness	0.225	0.798	3.877	3.782	3.806
Strategic Capability	Endogenous Luck	0.312	0.733	4.664	4.755	4.761
	Exogenous Luck	0.497	0.608	4.535	4.650	4.665

Table 4: ANOVA for impact of type of entrepreneurs on entrepreneurship

Table 4 indicates the results of ANOVA for the differences among the three type of entrepreneurs; novice, serial, and portfolio on the entrepreneurship. Entrepreneurs are divided into three categories according to their entrepreneurial experience and number of venture currently own. Results of ANOVA do not indicate significant of different among the three groups of entrepreneurs on any of the dimension in entrepreneurship. Referring to the mean values alone also does not reveal any indication that portfolio entrepreneurs are more entrepreneurial than serial and novice entrepreneurs. However, novice entrepreneurs are found to score highest in term of need for achievement, internal locus of control, opportunity evaluation, opportunity development, social perception, and expressiveness. Portfolio entrepreneurs on the other hand are found to score highest in term of opportunity identification, social adaptability, endogenous luck, and exogenous luck. Serial entrepreneurs are not found to score highest in any of the category in assessing the entrepreneurialism.

Although not statistically significant, the findings above are surprising showing the signal that novice entrepreneurs to some extent are more entrepreneurial than serial and portfolio entrepreneurs, especially in term of personality. One possibility is this group of “new” entrepreneurs are more ambitious and might be too optimistic towards their entrepreneurship career. In addition, since they are new to the entrepreneurship career, with relatively limited resources they have (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005), they are required to evaluate and executive the opportunities they foreseen. Thus, this might lead them to score highest in term of opportunity evaluation and opportunity development. Compare with the entrepreneurs at another extreme, portfolio entrepreneurs, the latter are shown to be less entrepreneurial in term of personality but are found to be stronger on building the strategic capability for their firms and also more adaptive to different social situations. This might be due to their experience as entrepreneurs have taught them to be less ambitious but more realistic in pursuing success. The highest score in opportunity is expected since they have to identify more opportunities to lead them to the position of portfolio entrepreneurs. Unsuccessful previous venture might have given a bad experience to serial entrepreneurs thus making them less entrepreneurial compare with either extreme of the entrepreneurs.

	F	Sig.	Education Level					
			No	Pri. /Sec.	Prof. Cert.	Dip. / Deg.	Post-grad	
Need for Achievement	4.611	0.001	4.533 ¹	4.667 ²	4.818	4.816	5.191 ^{1,2}	
Internal Locus of Control	2.132	0.076	4.600	4.898	5.091	4.982	5.185	
Opportunity Sensitivity	Identification	4.486	0.002	4.567 ^{1,2,3,a}	4.988 ¹	5.177 ²	5.164 ³	5.388 ^a
	Evaluation	2.012	0.092	4.400	4.938	5.024	4.969	5.171
	Development	2.329	0.056	4.280	4.843	4.994	4.868	5.106

Social Competence	Perception	2.573	0.038	3.760 ^{1,2,3}	4.178	4.412 ¹	4.433 ²	4.506 ³
	Adaptability	3.918	0.004	4.000 ^{1,2}	4.374	4.894	4.524 ¹	4.759 ²
	Expressiveness	1.632	0.166	3.720	3.668	3.976	3.873	3.644
Strategic Capability	Endogenous Luck	7.207	0.000	4.733 ^{1,2}	4.354	4.964	4.826 ¹	4.942 ²
	Exogenous Luck	9.287	0.000	4.000 ^{1,2,3}	4.217 ^{a,*}	4.638 ¹	4.770 ^{2,a}	4.911 ^{3,*}

^{1, 2, 3, a,*} indicates the pairs with significance of difference

Table 5: ANOVA for impact of education level on entrepreneurship

The effect of education level of the entrepreneurs on entrepreneurship is examined using ANOVA. Entrepreneurs are grouped into with no formal education, primary or secondary level of education, professional qualification, diploma or degree level of education, and postgraduate level of education. ANOVA is used to test for significance of different among these groups in term of entrepreneurship. Results from the ANOVA reveal that education level of the entrepreneurs to have significant effect on need for achievement ($F=4.611$; $p<0.05$), opportunity identification ($F=4.486$; $p<0.05$), social perception ($F=2.573$; $p<0.05$), opportunity adaptability ($F=3.918$; $p<0.05$), endogenous luck ($F=7.207$; $p<0.05$), and exogenous luck ($F=9.287$; $p<0.05$). Further more, the effect of entrepreneurs' education level on internal locus of control ($F=2.132$; $p=0.076$), opportunity evaluation ($F=2.012$; $p=0.092$), and opportunity development ($F=2.329$; $p=0.056$) are found to be crucial even not statistically significant at 95 percent confidence level. For the results with significant different, follow up pos hoc test is conducted using Duncan test. Overview of the pos hoc results indicates that entrepreneurs with higher level of education are found to be significantly more entrepreneurial than entrepreneurs with lower level of education. From the general trend of the findings, entrepreneurs with tertiary level of education; professional certification, diploma or degree, or postgraduate qualification, are significantly more entrepreneurial than entrepreneurs with no formal education level and entrepreneurs with only primary or secondary level of education.

Discussion of the Findings

From the results reported above, managerial experience, industrial experience, and entrepreneurial experience do not seem to have impact on entrepreneurialism of the entrepreneurs. Moreover, analysis on industrial experience does indicate the sign that industrial experience has actually weakened the entrepreneurialism of the entrepreneurs. This might show the worry of Haynes (2003) on the possibility for industrial experience to create rigidity for entrepreneurs whereby the entrepreneur tends to follow known models in problem solving and are less adaptive to new environment (Haynes, 2003). Thus, this has made them less entrepreneurial as well in term of their own personality and in managing the firm. Besides that, entrepreneurial experience has also found to have negative impact on endogenous luck and exogenous luck, the two dimensions measuring the flexibility and adaptability of the firm. This can be explained by their previous entrepreneurial experience, especially the “unhappy experience” that leads

to the ending of previous venture, might have made the entrepreneurs more cautious thus impose greater control to ensure that everything is in order. This might eventually sacrifice the most valuable strategic capability of SMEs. Managerial experience might be the most promising type of experience among the three types of experience investigated in this study in making the entrepreneurs more entrepreneurial.

Categorising of entrepreneurs into novice, serial, and portfolio to examine the impact on entrepreneurship does not appear to be conclusive as well. None of the categories is found to be significantly different from the other in the level of entrepreneurialism. This finding is obviously contradictory with Ucbasaran, Westhead and Wright (2003), Ucbasaran, Westhead, Wright, and Bink (2003), Westhead, Ucbasaran, and Wright (2005), and Westhead, Ucbasaran, Wright, and Bink (2005). A closer review of Westhead, Ucbasaran and associates' papers found that they are studying the effect on the type of entrepreneurs with each of the items in a variable rather than the variable as a whole. Thus, data revealed in this study is suspected to be insufficient to conclude that habitual entrepreneurs, which made up of serial and portfolio entrepreneurs, are more entrepreneurial than novice entrepreneurs in encountering entrepreneurial opportunity. Thus, the finding in this study might pose greater curiosity over the factors affecting entrepreneurialism of the entrepreneurs, since previous experiences of the entrepreneur do not appear to be crucial in explaining this.

Education level of the entrepreneurs is found to be significant in explaining the entrepreneurialism of the entrepreneurs. The general trend of the results indicates that entrepreneurs with higher level of education are more entrepreneurial. This finding has supported Lee (1997) argument that success in school will enhance the confidence of the students in facing challenges in their entrepreneurship career. In addition, the analytical and technical skills of the entrepreneurs that are enhanced through education (Lee & Tsang, 2001) might also improve their capabilities in decision making thus boosting the confidence of them to manage a more flexible and adaptable organisational culture. Furthermore, the liberalisation and globalisation of the world economy might have increased the complexity of the environment. Information and technology communication has also made the customer to be more demanding thus impose greater requirements for firms to stay competitive (Wee, 2003). All these factors might make education a critical factor in determining the success of the firm resulting from increasing complexity that requires greater competence and greater entrepreneurialism from the entrepreneurs (Lee & Tsang, 2001).

Policy Implications

This study is to assist government in encouraging more entrepreneurs in the country and directing the right person into the entrepreneurship career. The results of this study indicate that previous experience working in similar industry, experience in holding managerial position, and experience as entrepreneur do not show to be relevant towards enhancing the entrepreneurialism of individuals. Analysis of data collected also does not reveal significance of difference among novice, serial, and portfolio entrepreneurs

in their level of entrepreneurialism. Thus, the experiences of an individual include the track record in entrepreneurship career should not be referred in making decision to provide assistance for them in starting up a new business venture. In fact, the allocation of the financial support for development of entrepreneurship in the country should be directed to the novice since they are lacking in social network during the start-up process. This is because directing the funds to this group of individual will better fit the objective of the government in balancing the wealth distributions in the country. Moreover, providing assistant to those with good track records also do not guarantee greater chances of success as these track records do not make them more entrepreneurial.

The significance of education level of the individual towards level of entrepreneurialism might be good news to the government as Malaysia is facing the problem with unemployed graduate. Government might take initiative to push this group of individuals into entrepreneurship career. However, government is still advised to take initiative to provide additional technical training to them before approving the financial assistance. This is because one of the possible reasons for these graduates to remain unemployed is lacking of competency. Thus, they may not be as competence and as entrepreneurial as the respondents in this study who might be pull into entrepreneurship career due to the opportunity they have perceived. This policy might solve the problem with unemployed graduates but in term of wealth distribution, this policy might improve the well being of middle class rather than the lower class income residents. Therefore, the author urges the government to take into consideration of establishing an Entrepreneurship College for school dropout to learn technical skills and managerial skills at the same time. This will help in building entrepreneurs and in transforming the craftsmen into entrepreneurs. Furthermore, assisting the school dropout may balance the wealth distribution of the country since this group of individuals are more likely to struggle for a living in this increasingly knowledge based economy if no assistance is provided. In addition, the Entrepreneurship College also provides the second opportunity for the school dropout to further their study to improve their entrepreneurialism. However, the Entrepreneurship College should be designed in the way that focuses more on practical knowledge rather than theoretical knowledge.

Conclusion

This study builds on the works of Westhead, Ucbasaran, and associates (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005; Westhead, Ucbasaran, Wright & Bink, 2005) with more comprehensive reviews focusing on the dimensions of human capitals and entrepreneurship. Results from the multiple analyses do not give any obvious indications of the effect from various experiences on entrepreneurialism of the entrepreneurs. Furthermore, it is surprising to observe that industrial experience might even have negative impact on entrepreneurship. Besides, categorising the entrepreneurs into novice, serial, and portfolio entrepreneurs (Ucbasaran, Westhead & Wright, 2003; Ucbasaran, Westhead, Wright & Bink, 2003; Westhead, Ucbasaran & Wright, 2005;

Westhead, Ucbasaran, Wright & Bink, 2005) does not yield the expected results. No significant differences have been detected among the three groups of entrepreneurs. However, higher level of education has proven to be crucial in building the elements of entrepreneurship on the individual entrepreneurs. Thus, policy makers should try to enhance the education level of the citizens as long term policy to strengthen the entrepreneurship in the country. This will likely to ensure a sustainable future and development of entrepreneurship especially in the context of Malaysian SMEs.

Reference:

Akio, T. (2005). The Critical Assessment of the Resource-Based View of Strategic Management: The Source of Heterogeneity of the Firm. *Ritsumeikan International Affairs*, 3, 125-150.

Alsos, G. A. and Kaikkonenm, V. (2004). Opportunity Recognition and Prior Knowledge: A Study of Experienced Entrepreneurs. 13th Nordic Conference on Small Business Research.

Alvarez, S. A. and Busenitz, L. W. (2001). The Entrepreneurship of Resource-based Theory. *Journal of Management*, 27, 755-775.

Ardichvili, A. and Cardozo, R. N. (2000). A Model of the Entrepreneurial Opportunity Recognition Process. *Journal of Enterprising Culture*, 8(2), 103-119.

Ardichvili, A., Cardozo, R., and Ray, S. (2003). A Theory of Entrepreneurial Opportunity Identification and Development. *Journal of Business Venturing*, 18, 105-123.

Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120.

Baron, R. A. (2000). Psychological Perspectives on Entrepreneurship: Cognitive and Social Factors in Entrepreneurs' Success. *Current Directions in Psychological Science*, 9(1), 15-18.

Baron, R. A. (2004). Opportunity Recognition: A Cognitive Perspective. *Academy of Management Best Conference Paper*.

Baron, R. A. and Markman, G. D. (2000). Beyond Social Capital: How Social Skills can Enhance Entrepreneurs' Success. *The Academy of Management Executive*, 14(1), 106-115.

Baron, R. A. and Markman, G. D. (2003). Beyond Social Capital: The Role of Entrepreneurs' Social Competence in Their Financial Success. *Journal of Business Venturing*, 18, 41-60.

Beugelsdijk, S (2007). Entrepreneurial Culture, Regional Innovativeness and Economic Growth. *Journal of Evolutionary Economics*, 17, 187-210.

- Borch, O. J., Huse, M., and Senneseth, K. (1999). Resource Configuration, Competitive Strategies and Corporate Entrepreneurship: An Empirical Examination of Small Firms. *Entrepreneurship Theory and Practice*, 49-70.
- Brockhaus, R. H. (1976). Locus of Control and Risk-Taking Propensity as Entrepreneurial Characteristics – A Comparative Study. Doctorate Dissertation: Washington University.
- Carland, J. W., Hoy, F., Boulton, W. R., and Carland, J. A. C. (1984). Differentiating Entrepreneurs from Small Business Owners: A Conceptualization. *Academy of Management Review*, 9(2), 354-359.
- Casson, M. (2005). The Individual – Opportunity Nexus: A Review of Scott Shane: A General Theory of Entrepreneurship. *Small Business Economics*, 24, 423-430.
- Cromie, S. (2000). Assessing Entrepreneurial Inclinations: Some Approaches and Empirical Evidence. *European Journal of Work & Organizational Psychology*, 9(1), 7-30.
- Cunha, M. P. (2005). Serendipity: Why some Organizations are Luckier than Others. Working paper: Universidade Nova de Lisboa.
- Denrell, J., Fang, C., and Winter, S. G. (2003). The Economics of Strategic Opportunity. *Strategic Management Journal*, 24, 977-990.
- Dimov, D. P. (2003). The Classes of Experience: An Experiential Theory of Opportunity Recognition. Unpublished Manuscript: London Business School.
- Dollinger, M. J. (1999). *Entrepreneurship: Strategies and Resources*, 2nd Edition. New Jersey: Prentice-Hall.
- Dyke, L. S., Fischer, E. M., and Reuber, A. R. (1992). An Inter-industry Examination of the Impact of Owner Experience on Firm Performance. *Journal of Small Business Management*, 30(4), 72-87.
- Eckhardt, J. T. and Shane, S. A. (2003). Opportunities and Entrepreneurship. *Journal of Management*, 29(3), 333-349.
- Fiengenbaum, A. and Karnani, A. (1991). Output Flexibility – A Competitive Advantage for Small Firms. *Strategic Management Journal*, 12(2), 101-114.
- Fine, G. and Deegan, J. (1996). Three Principles of Serendip: Insight, Chance, and Discovery in Qualitative Research. *Qualitative Studies in Education*, 9(4).
- Foster, A. and Ford, N. (2003). Serendipity and Information Seeking: An Empirical Study. *Journal of Documentation*, 59(3), 321-340.
- Grant, R. M. (1991). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), 114-135.

- Green, J. E. (1973). Need for Achievement, Need for Affiliation and the Adjustment of High School Students. Master Thesis: University of Windsor.
- Green, R., David, J., Dent, M., and Tyshkovsky, A. (1996). The Russian Entrepreneur: A Study of Psychological Characteristics. *International Journal of Entrepreneurial Behaviour & Research*, 2(1), 49-58.
- Greve, A. and Salaff, J. W. (2003). Social Networks and Entrepreneurship. *Entrepreneurship Theory and Practice*, 1-22.
- Gürol, Y. and Atsan, N. (2006). Entrepreneurial Characteristics amongst University Students: Some Insights for Entrepreneurship Education and Training in Turkey. *Education & Training*, 48(1), 25-38.
- Hart, M. M., Stevensen, H. H., and Dial, J. (1995). Entrepreneurship: A Definition Revisited, in Bygrave, W. D., Bird, B. J., Birley, S. Churchill, N. C., Hay, M. G., Keeley, R. H., and Wetzel, W. E. (Eds.) *Frontiers of Entrepreneurship Research*, Babson College Center for Entrepreneurship Study, Wellesley, M.A.
- Haynes, P. J. (2003). Differences among Entrepreneurs: “Are You Experienced?” May be the Wrong Question. *International Journal of Entrepreneurial Behaviour & Research*, 9(3), 111-128.
- Ishikawa, I. (2006). The Source of Competitive Advantage and Entrepreneurial Judgement in the RBV: Insights from the Austrian School Perspective. Unpublished Manuscript: Copenhagen Business School and Ritsumeikan University.
- Jaafar, Mastura & Abdul-Aziz, Abdul-Rashid. (2005). Resource-Based View and Critical Success Factors: A Study on Small and Medium Sized Contracting Enterprises (SMCEs) in Malaysia. *The International Journal of Construction Management*, 61-77.
- Jones, O. (2003). Competitive Advantage in SMEs: Towards a Conceptual Framework. In Tilley, F. and Tonge, J. (Eds.). *Competitive Advantage in SMEs: Organising for Innovation and Change* (Pp. 15-33). England: John Wiley & Sons Ltd.
- Kaufmann, P. J., Welsh, R. H. B., and Bushmarin, N. V. (1996). Locus of Control and Entrepreneurship in the Russian Republic. *Entrepreneurship Theory and Practice*, 43-56.
- Kirzner, I. M. (1973). *Competition and Entrepreneurship*. Chicago: University of Chicago Press.
- Koeing, M. (2000). Why Serendipity is the Key to Innovation. *Knowledge Management Review*, 3(2), 10-11.
- Korunka, C., Frank, H., Lueger, M., and Mugler, J. (2003). The Entrepreneurial Personality in the Context of Resources, Environment, and the Startup Process – A Configurational Approach. *Entrepreneurship Theory and Practice*, 23-42.
- Lee, D. Y. and Tsang, E. W. K. (2001). The Effects of Entrepreneurial Personality, Background and Network Activities on Venture Growth. *Journal of Management*

Studies, 38(4), 583-602.

Lee, J. (1997). The Motivation of Women Entrepreneurs in Singapore. *International Journal of Entrepreneurial Behaviour & Research*, 3(2), 93-110.

Lee, J. and Chan, J. (1998). Chinese Entrepreneurship: A Study in Singapore. *Journal of Management Development*, 17(2), 131-141.

Levenson, H. (1974). Activism and Powerful Others: Distinctions within the Concept of Internal-External Control, *Journal of Personality Assessment*, 38, 377-383.

Levenson, H. (1981). Differentiating among Internality, Powerful Others and Chance. In Lefcourt, H. (Ed.). *Research with the Locus of Control Construct: Assessment Methods*, 1. New York.

Littunen, H. (2000). Entrepreneurship and the Characteristics of the Entrepreneurial Personality. *International Journal of Entrepreneurial Behaviour & Research*, 6(6), 295-309.

Littunen, H. and Storhammar, E. (2000). The Indicators of Locus of Control in the Small Business Context. *Journal of Enterprising Culture*, 8(4), 343-360.

Liu, Z. (2006). Competitive Advantage: An Analytical Framework Based on Entrepreneurship. *Frontier of Economic in China*, 1(2), 182-195.

Llewellyn, D. J. and Wilson, K. M. (2003). The Controversial Role of Personality Traits in Entrepreneurial Psychology. *Education + Training*, 45(6), 341-345.

Ma, H. (2002). Competitive Advantage: What's Luck got to do with it? *Management Decision*, 40(6), 525-536.

Mathews, J. A. (2002). A Resource-based View of Schumpeterian Economic dynamics. *Journal of Evolutionary Economics*.

Mazzarol, T., Volery, T., Doss, N., and Thein, V. (1999). Factors Influencing Small Business Start-ups: A Comparison with Previous Research. *International Journal of Entrepreneurial Behaviour & Research*, 5(2), 48-63.

McClelland, D. (1961). *The Achieving Society*. Van Nostrand Reinhold, Princeton: New Jersey.

Pandey, J. and Tewary, N. B. (1979). Locus of Control and Achievement Vales of Entrepreneurs. *Journal of Occupational Psychology*, 50, 107-111.

Park, S. H. and Luo, Y. (2001). Guanxi and Organisational Dynamics: Organisational Networking in Chinese Firms. *Strategic Management Journal*, 22, 455-477.

Pech, R. J. and Cameron, A. (2006). An Entrepreneurial Decision Process Model Describing Opportunity Recognition. *European Journal of Innovation Management*, 9(1), 61-75.

- Peteraf, M. A. (1993). The Cornerstones of Competitive Advantage: A Resource-Based View. *Strategic Management Journal*, 14(3), 179-191.
- Pil, F. K. and Holweg, M. (2003). Exploring Scale: The Advantages of Thinking Small. *MIT Sloan Management Review*, 33-39.
- Praag, M. V. (1996). *Determinants of Successful Entrepreneurship*. Amsterdam: Thesis Publisher.
- Quiñones, M. A., Ford, J. K., and Teachout, M. S. (1995). The Relationship between Work Experience and Job Performance: A Conceptual and Meta-Analytic Review. *Personal Psychology*, 48, 887-910.
- Rauch, A. and Frese, M. (2000). Psychological Approach to Entrepreneurial Success. A General Model and an Overview of Findings. In Cooper, C. L. and Robertson, I. T. (Eds.). *International Review of Industrial and Organisational Psychology*, (Pp. 101-142). Chichester: Wiley.
- Rotter, J. B. (1966). Generalized Expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 609(80), 1.
- Sanz-Velasco, S. A. (2006). Opportunity Development as a Learning Process for Entrepreneurs. *International Journal of Entrepreneurial Behaviour & Research*, 12(5), 251-271.
- Schumpeter, J. (1934). *Capitalism, Socialism, and Democracy*. New York: Harper & Row.
- Schwartz, R. G., Teach, R. D., and Birch, N. J. (2005). A Longitudinal Study of Entrepreneurial Firms Opportunity Recognition and Product Development Management Strategies: Implications by Firm Type. *International Journal of Entrepreneurial Behaviour & Research*, 11(4), 315-329.
- Shane, S. and Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review*, 25(1), 217-226.
- Spangler, W. D. (1992). Validity of Questionnaire and TAT Measures of Need for Achievement: Two Meta-Analyses. *Psychological Bulletin*, 112(1), 140-154.
- Stevenson, H. H. and Jarillo, J. C. (1990). A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal*, 11(5), 17-27.
- Stuart, R. W. and Abetti, P. A. (1990). Impact of Entrepreneurial and Managerial Experience on Early Performance. *Journal of Business Venturing*, 5, 151-162.
- Sulaiman, Mohamad and Hashim, Mohd Khairuddin (n.d.). *Revisiting the Issues and Research Agenda for SMEs in Malaysia*. Unpublished Manuscript: University Sains Malaysia.
- Taylor, D. and Pandza, K. (2003). *Networking Capability: The Competitive Advantage*

of Small Firms. In Tilley, F. and Tonge, J. (Eds). *Competitive Advantage in SMEs: Organising for Innovation and Change* (Pp. 156-174). England: John Wiley & Sons Ltd.

Twenge, J. M., Zhang, L., and Im, C. (2004). It's Beyond My Control: A Cross-Temporal Meta-Analysis of Increasing Externality in Locus of Control, 1960-2002. *Personality and Social Psychology Review*, 8(3), 308-319.

Ucbasaran, D. Wright, M., and Westhead, P. (2003). A Longitudinal Study of Habitual Entrepreneurs: Starters and Acquirers. *Entrepreneurship & Regional Development*, 15, 207-228.

Ucbasaran, D., Westhead, P., Wright, M., and Binks, M. (2003). Does Entrepreneurial Experience Influence Opportunity Identification? *The Journal of Private Equity*, 7-14.

Van Gelderen, M. (2004). A Framework for Conjecturing Entrepreneurial Opportunities: An Application to Individualization of Demand in the Undertaking Business. *Journal of Enterprising Culture*, 12(4), 351-371.

Venkataraman, S. (1997). The Distinctive Domain of Entrepreneurship Research: An Editor's Perspective. In Katz, J. and Brockhaus, R. (Eds.). *Advances in Entrepreneurship, firm emergence, and growth*, 3 (Pp. 119-138). Greenwich, CT: JAI Press.

Westhead, P., Ucbasaran, D., and Wright, M. (2005). Decisions, Actions, and Performance: Do Novice, Serial, and Portfolio Entrepreneurs Differ? *Journal of Small Business Management*, 43(4), 393-417.

Westhaed, P., Ucbasaran, D., Wright, M., and Binks, M. (2005). Novice, Serial and Portfolio Entrepreneur Behaviour and Contributions. *Small Business Economics*, 25, 109-132.

Wicks, D. (2005). When Bigger Isn't Better: The Strategic Competitive Advantage of Small Firms. *The Workplace Review*, 4-10.

Yu, T. F. (2001). Towards a Capabilities Perspective of the Small Firm. *International Journal of Management Review*, 3(3), 185-197.

Jeen Wei Ong; Hishamuddin Bin Ismail (2008) Human Capitals make Entrepreneur more Entrepreneurial? An Empirical Data from Small and Medium Enterprises in Malaysia. *Journal of Asia Entrepreneurship and Sustainability*, (4)1, 83-105