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From the Editor

The importance and influence of Entrepreneurial Orientation (EO) on the behavior of enterprises, their results and effectiveness, is one of fundamental areas of interest of scientists, as well as single- and multi-dimensionality of this concept. Other constructs, such as entrepreneurial intentions, activities and opportunities seem to be derivatives of entrepreneurial orientation, without which none of these elements could appear in this area of studies. Issue 3 of JEMI, which we are proud to offer to our readers, is a collection of interesting articles, both from scientific and practical point of view, on entrepreneurial orientation, entrepreneurial intentions and opportunities offered by entrepreneurship, which becomes an effective alternative to unemployment and social exclusion.

The first article relates to experiences of Mexican micro-enterprises in the context of entrepreneurial orientation and its influence on the productivity of analyzed companies. The authors referred to dominant logic, as a variable moderating the subject relation. Other variables, such as risk-taking, proactiveness and competitive aggressiveness also affect the productivity of analyzed firms. The article lists constraints and methods of further research into this subject. The next article presents entrepreneurial orientation in government-linked companies (GLC) and investigates the influence of innovativeness, proactiveness, risk-taking, competitive aggression and autonomy, understood as dimensions of entrepreneurial orientation in GLCs. The EE concept can be applied not only to private but to state companies as well and the latter can be successfully managed and achieve good results.

The second part of this Issue discusses entrepreneurial intentions among graduates of the university selected for the research. The authors proved that for students entrepreneurial intentions are not only related to attitudes, social norms and self-efficacy, but also to their knowledge of business associations. Moreover, access to information on business associations helps students staying abroad to return to their homeland and prevents ‘brain drain’. The authors are right to emphasize that the existing models of entrepreneurship are largely based on research conducted in the USA and other developed countries, while they should be able to describe how entrepreneurship is conducted in developing economies. Therefore it is vital for the model of entrepreneurial intentions to cover the growth of local share and ownership.

Another issue discussed here is the influence of poverty, unemployment and GDP on entrepreneurship. We should emphasize the multi-year time period of the research, which allows us to measure multiple time series using adequate research methods. The volume concludes with considerations of high-risk funds and development of new technology ventures. The results demonstrated that cooperation with business groups and government certification positively influence venture capital investment. This might be a good recommendation for the above issues in such countries as Malaysia and Nigeria.

We would like to thank the Authors for their contributions to this Issue of JEMI and the Reviewers for their invaluable comments, which are reflected in the final edition of Entrepreneurial Orientation and Opportunities. We hope that the papers presented here will be of interest to scientists exploring this and related areas of knowledge.

Anna Ujwary-Gil
Editor-in-Chief, JEMI

Entrepreneurial Orientation in Mexican Microenterprises

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Abstract

Over the past 30 years research on Entrepreneurship Orientation (EO) has provided valuable information regarding strategy, entrepreneurship and aspects of performance at the firm-level. In the entrepreneurial universe, microenterprises play a very special role in the business context of the economy. However, they have not been relatively present in the EO research. This paper studies the EO-performance relationship in a group of microenterprises in Mexico and includes the Dominant Logic (DL) as a variable that moderates this relationship. The results indicate that risk taking, proactiveness and competitive aggressiveness variables from the EO influence the microenterprise performance. In addition, the external DL conceptualization moderates the EO-performance relationship. This paper shows the conclusions of the investigation as well as the limitations and identifies future research methods.

Keywords: *entrepreneurial orientation, dominant logic, firm performance, microenterprises.*

Introduction

In recent years enormous progress has been made in the field of Entrepreneurship, which has helped strengthen some of its paradigms. The cross-disciplinary nature of this research field causes an exchange of knowledge and that which occurs within the field of strategy is of particular interest for this research. This exchange recognizes that entrepreneurship can be studied not only individually but also organizationally (Dess, Lumpkin and McGee, 1999).

The concept that causes the rapprochement between the strategy and entrepreneurship disciplines is called Entrepreneurial Orientation (EO). This construct is based on different variables to identify the organization's

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entrepreneurial behavior. EO has its origins in the literature on strategy and its importance lies in previous research which has shown that the greater the EO, the better the firm's performance (Rauch, Wiklund, Lumpkin and Freese, 2009). EO in a business is geared towards the recognition, evaluation and exploitation of business opportunities. However, research has shown that the EO-firm performance requires consideration of other variables. It is important to include contingent internal or external factors, to help a better understanding of the EO-firm performance relationship (Covin, Green and Slevin, 2006). In this regard, we have attempted to analyze the EO-performance relationship in microenterprises including Dominant Logic (DL) as an internal contingent variable to moderate the relationship.

This research is part of a project that studies the EO-performance relationship in Mexican companies. Regarding the DL, the relationship EO-DL-performance in new companies was initially investigated (Montiel, Nuño and Solé, 2012), i.e., EO had a positive impact on DL which, in turn, had a positive impact on firm performance. Now, on this occasion, the EO's and DL's combined effect on microenterprise performance, was investigated. To be more precise, this work's aim was to determine if in the Mexican microenterprises' context the EO-performance relationship is moderated by the DL. To achieve this goal, 302 microenterprises in central Mexico were investigated and, therefore, it is believed that this work makes three important contributions. First, it identifies whether the microenterprise's DL moderates the relationship that may exist between EO and its performance. Second, it contributes to the future development of a DL assessment scale, to better understand the strategic decision making style. Finally, the microenterprise, due to its size, is the type of organization that is not always of great interest as an object of study. Therefore, it is believed that this work helps to understand the competitive arena of these businesses.

The next section of this paper offers review of the literature and hypotheses that guide this work. The methodology section describes the various activities that took place during the research. The main results are also discussed as well as the limitations of this research. Future research is suggested and, finally, the conclusions of this work are developed.

Literature review

Entrepreneurial orientation and performance

Although the literature in the field of entrepreneurship demonstrates the existence of multiple paradigms, none of them is dominant (Montiel, Solé and Palma, 2012). In past decades, the EO study has become a central theme in the literature on entrepreneurship and strategy, as several

authors consider entrepreneurship a phenomenon at the organizational level (Covin and Wales, 2012). The EO helps to characterize the company's behavior along a continuum that ranges from highly conservative to highly entrepreneurial and the company's position in this continuum describes its EO (Basso, Fayolle and Bouchard, 2009). This original construct can be found in Miller's work (1983), although he admits that he never used the EO term in his initial ideas (Miller, 2011). Originally, Miller (1983, p. 771) mentioned that, "An entrepreneurial firm is the one that engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch". For Stevenson and Jarillo (1990), a company has entrepreneurial behavior if their actions and processes are oriented to the recognition and exploitation of entrepreneurial opportunities. From a more general approach, EO refers to the trends, processes and behaviors that lead a company to enter new markets, whether with new or with existing products (Lumpkin and Dess, 1996). On the other hand, there is interest in the EO because it is considered a predictive variable of company performance, i.e. if a company adopts EO and becomes more Entrepreneurially Oriented it will have a better performance (Rauch et al., 2009).

Miller's (1983) initial approaches were adopted in the academic literature, so that Covin and Slevin (1989) conceptualized the company's entrepreneurial behavior based on three variables: innovativeness, risk taking and proactiveness. These authors stated that these variables covariated and that the covariance source was a construct which they called entrepreneurial posture. At this point the Miller/Covin and Slevin's (1989) scale emerged. Subsequently, Lumpkin and Dess (1996) postulated that these variables are insufficient to explain entrepreneurship at the organizational level, as the business posture would require other dimensions. Lumpkin and Dess (1996) assured that the original variables could independently covariate among them, contradicting what had been established by Covin and Slevin (1989) and should be modeled in a combination of new variables called EO. In addition to the initial variables, the competitive aggressiveness and autonomy variables were included. To Lumpkin and Dess (1996), the innovativeness indicates the company's trend of supporting new ideas and fostering creative processes. Risk taking is the company's tendency to work on projects whose benefits are uncertain. Proactiveness is about taking initiatives and pursuing new business opportunities in emerging markets. Competitive aggressiveness is facing competition in order to enter new markets or to improve the competitive position. Finally, autonomy is the degree to which organizational factors (people and team) act independently, making decisions and pursuing opportunities.

The relationship between EO and firm performance has been studied for several years and has shown that companies that adopt an EO have better performance than those with a more conservative orientation (Rauch et al. 2009). Companies, as they are smaller in size, are more vulnerable because of their limited access to capital, debt capacity, market share, technology acquisition, among others (Autio, 1997). This may cause the company to adopt a more conservative posture. In addition to this, the aggressive competitiveness they might experience requires them to seek new business opportunities and make the necessary changes in order to stay in business. This leads us to consider that a microenterprise, i.e., the smaller business organization, can be an interesting scenario in which to analyze the EO effect on performance. Therefore, the following hypothesis is proposed:

H1: The more EO the microenterprises have, the better their performance.

Dominant logic

In 1986, Prahalad and Bettis introduced the Dominant Logic (DL) concept and they refer to it as a way in which managers conceptualize the business and make important decisions based on the allocation of resources. Prahalad and Bettis mention that the way in which business managers make strategic decisions, depends heavily on cognitive orientation, i.e. previous experiences influence how managers solve dilemmas they face in the business. That is why many strategic initiatives fail because management has a rather rigid cognitive orientation and it cannot enrich its DL in order to impact new business opportunities or structural changes in the business (Prahalad and Bettis, 1986).

In a reflection on their original ideas, Bettis and Prahalad (1995) conceive the DL as a filter through which managers choose the information that is important for making decisions. This filtering mechanism influences the strategic development in the company's direction. Authors recommend that managers should enrich that filter or adjust it to a new pattern, given the changing environment in which the company competes. The DL concept provides an explanation of this phenomenon, and the reason why some firms are able to anticipate fundamental changes in their main line of business or why they are skillful in reacting to those changes earlier than other companies in the same industry, thus becoming more successful (Von Krogh, Erat and Macus, 2000). In this sense, the DL can also limit the company's ability to adapt to environmental changes (Cotê, Langley and Pasquero, 1999). When managers decide what strategies to follow in the future, DL acts as a lens that allows them to visualize the future and thus allows them to restrict the range of strategic options (Grant, 1988). If the results are positive, the DL's validity

is confirmed, otherwise, the DL is questioned and should be changed (Bettis and Prahalad, 1995).

The academic debate on DL concentrates on its difficulty to operationalize this construct. The different formulations that have been raised are linked to the way in which managers conceptualize the business and Von Krogh et al.'s (2000) proposal makes a good assessment of this. Von Krogh et al. (2000) writes about DL's internal and external conceptualization. The internal conceptualization examines the extent to which the manager's beliefs, values and assumptions have been impregnated throughout the organization. Included in the internal conceptualization are people, culture, as well as product and brand. The external conceptualization focuses on the manager's position to deal with the market's complexity in which the organization operates to stay competitive. The external conceptualization includes competitors, customers, consumers and technology. The Von Krogh et al. (2000) proposal is in the spirit of defining Prahalad and Bettis (1986) DL and is consistent with the Grant (1998) and Ginsberg (1990) proposed formulations.

Since the DL represents the manager's preferences, opinions and assumptions under which the manager runs the business, it is important to raise the possibility that the DL also influences firm performance. Under this approach, previous works show that firm's performance can be enhanced when key variables are properly aligned (Naman and Slevin, 1993). In the same perspective, the contingency theory states that the relationship between two variables can be improved with the intervention of a third variable (Rosenberg, 1968). The literature discusses different variables that influence the EO-performance relationship, such as the founder-director's psychology (Poon, Ainuddin and Junit, 2006), knowledge (Wiklund and Shepherd, 2003), learning (Wang, 2008), social networks (Walter, Auer and Ritter, 2005), strategic processes (Covin, Green and Slevin, 2006), access to financial resources (Wiklund and Shepherd, 2005) and the environment's influence (Zahra and Garvis, 2000; Marino, Stradholm, Steensma, and Weaver, 2002). However, in this series of studies the DL was not included as a contingent variable of EO-performance relationship, since decisions made by the founder-manager are essential due to the dominant effect it has on the company's performance. From the above, the following hypothesis is proposed:

H2: The relationship between the microenterprise's EO and their performance is moderated by the founder-manager DL.

Methodology

Sample and data collection

This research focused on the entrepreneurship study in the business sector with low growth potential, particularly those firms developed as income substitute firms (Kunkel, 2001). The main purpose of this kind of business is not to achieve rapid growth to reach the large corporations' level, but to generate an income comparable to what entrepreneurs involved in business could expect to earn if they worked as employees in an established company. The reason for this approach is that microenterprises in Mexico represent an important source of employment and wealth creation (Naranjo and Campos, 2011).

The sample from its design was considered as not probabilistic due to the purpose of the investigation to identify microenterprises located in the central region of Mexico. With the National Chamber of Commerce's support firms in the states of Mexico, Puebla, Tlaxcala and Hidalgo that met the following criteria were identified: 1. Having no more than 10 employees and a maximum of $300,000 in annual sales, according to the classification of the Ministry of Economy in Mexico. 2. a firm more than five years old, for it is not considered as start-up. 3. a company that belongs to the commercial sector with at least one branch. 4. Not franchising.

Since the purpose of this study was to explore the relationship between variables, a survey was used for data collection. a pilot test was conducted to eliminate any doubts or confusion of the instrument, so that the final design incorporated the comments received. This resolved the validity of the external instrument. Initially 1,346 surveys were sent electronically and subsequently the process of obtaining information was reinforced through interviews. The final surveys were received between October 2011 and July 2012. Of a total of 317 surveys, 15 were rejected for not meeting any of the criteria, leaving a total of 302 surveys. The 302 microenterprises can be divided into the following business activities: grocery (21%), restaurant (15%), footwear (14%), furniture (13%), drugstore (11%), bakery (9%), clothing (7%), bookstore (5%), jewelry (3%), and other (2%).

Measurements

The first independent variable was the EO. This work used the Lumpkin and Dess (1996) proposal to measure the EO. This scale measures the company's tendency towards innovation, risk taking, proactiveness, competitive aggressiveness and autonomy. Rauch et al. (2009) suggests that this scale represents a valid means to measure the decisions and actions at the organizational level. The scale contains 14 items, which are evaluated using

a 7 points Likert's scale and their average indicates the company trend towards the EO, therefore, the higher the average the greater the company's EO. In this scale the alpha coefficient was 0.82.

The DL was the second independent variable. For this job, the Krogh et al. (2000) proposal was used to develop a unique measuring scale. The measurement scale had an internal and external conceptualization, so it was decided to respect this difference and not to obtain an overall average. From this, a 3 items measurement scale was developed, which was assessed using a 7 points Likert's scale and their average assessed the internal conceptualization. Also a 4 items measurement scale was developed, which was also evaluated using a 7 points Likert's scale and their average assessed the external conceptualization. The greater the average, the greater DL use, either in internal or external conceptualization. The alpha coefficient was 0.72, which is enough to categorize this as a job of an exploratory nature (Wiklund and Shepherd, 2005).

With respect to the dependent variable, firm performance was assessed using subjective measures which serve as good substitutes in the absence of hard data (Brush and Vanderwerf, 1992, Cooper, 1993). The surveys were applied to asking the founder-manager to assess their firm's performance compared to its main competitors over the previous three years (Wiklund and Shepherd, 2003). Performance criteria were: cash flow, return on capital employed and sales growth. Performance was calculated using the average of the three items measurement scale and if the average was greater, the firm's performance was better. The alpha coefficient was 0.84.

The firm's age and the environment hostility were included as control variables, since previous studies have shown to have an influence on firm's performance (Lumpkin and Dess, 2001; Miles, Covin and Heeley, 2000). The company's age was measured using the number of years since the company began commercial operations. Hostility was assessed using the Covin and Slevin (1990) 7-point semantic differential scale. The scale contains 3 items and as the average was greater, the company's competitive environment was more hostile. The 0.75 alpha coefficient was acceptable (Wiklund and Shepherd, 2005).

Data analysis

The information analysis was carried out gradually in order to improve the investigation results. First, the appropriateness of the scales was analyzed for the type of firm being investigated. a principal components analysis was conducted using 24 items to assess the 8 variable identification by respondents (innovativeness, risk taking, proactiveness, competitive aggressiveness, autonomy, internal conceptualization, external conceptualization and

performance). Following this, a confirmatory factor analysis was conducted in order to determine whether the variables that comprised the EO and DL constructs represented different variables, otherwise to confirm the need to eliminate some variables to best fit the results. The model was evaluated using χ2/df, Goodness-of-Fit Index (GFI) (Jöreskog and Sörbom, 1996), and the Comparative Fit Index (CFI) (Bentler, 1992). The threshold for χ2/df should be less than three or less than two in a more restrictive sense (Premkumar and King, 1994). The GFI and CFI values should be above 0.90 (Jöreskog and Sörbom, 1996). The hypotheses were tested using the correlation analysis and multiple regression analysis.

Results and discussion

The principal component analysis showed that innovativeness, risk taking, proactiveness, competitive aggressiveness, autonomy, internal conceptualization, external conceptualization and performance were identified by respondents. Moreover, the initial results of the confirmatory factorial analysis suggested that it was necessary to eliminate three variables, as they did not improve the final results and made the analysis more complex. This demonstrates that the measurement of these variables was already covered by other variables already in the model. The EO's variables innovativeness and autonomy were eliminated, as well as the DL's variable internal conceptualization. Once these variables were eliminated, the analysis to estimate the model size was done again. The results suggested that it was not necessary to remove more items to improve the fit of the model.

It is necessary to make some comments regarding the variables that were removed from the analysis. First, the autonomy and internal conceptualization variables were eliminated as it was clear that these two variables are irrelevant since the sample design is based on the founder-manager leading role in decision-making. That is, there is no room to share decision-making due to the small size of the organization being investigated. In relation to innovativeness, this is a variable that simply does not add anything to the strategic commitment of the microenterprise being investigated. This may indicate that the firm's competitiveness may be more obvious in its market share defense, hence, the firm must anticipate or react quickly to the activities and responses of competitors.

Regarding the EO, the model resulted in a good fit: $\chi 2/df = 2.48$, GFI = .901, CFI = 0.932. All the factor loadings are in acceptable ranges and significant at $p = 0.001$, ranging from 0.71 to 0.83 indicating convergent validity (Anderson and Gerbin, 1988). The average variance obtained for the measurement of EO was 0.72, which is slightly higher than the threshold suggested by Bagozzi

and Yi (1988). In relation to the DL, the model also showed a good fit: χ2/df = 2.95, GFI = .893, CFI = 0911. All the factor loadings are in acceptable ranges and significant at p = 0.001, ranging from 0.63 to 0.79 indicating convergent validity and the average variance obtained for the measurement of DL was 0.67. Finally, the performance model also showed good fit: χ2/df = 2.66, GFI = .941, CFI = 0.922. All the factor loadings are ranging from 0.73 to 0.84 and the average variance obtained for the measurement of performance was 0.82.

Table 1. Descriptive statistics and correlations

	Variable	Mean	SD	1	2	3	4	5
1	Age	11.4	2.74	1.00				
2	Environmental hostility	5.11	1.95	-0.09**	1.00			
3	Dominant logic	3.43	1.08	0.24**	0.32**	1.00		
4	Entrepreneurial orientation	4.14	0.89	0.10***	0.07***	0.22**	1.00	
5	Firm performance	4.75	1.54	0.18**	-0.14**	0.19**	0.26*	1.00

N = 302
* p < 0.10; **p < 0.05; ***p < 0.01

The averages, standard deviations and Pearson's correlations between the firm's performance, EO, DL and the control variables can be seen in Table 1. The correlation analysis can be used as a preliminary evaluation for the subsequent hypothesis confirmation, which requires a different type of analysis. Initially, it can be said that there is a positive relationship between EO and firm's performance (ρ = 0.26), and a slightly lower relationship between DL and firm's performance (ρ = 0.19). With respect to the age variable, there is a positive relationship (ρ = 0.18), which may indicate that the older the company is, the better its performance; that is, it may be taking more risks and be more proactive than their competitors. Also, another interesting aspect to analyze is the relationship between EO and DL, which is significant (ρ = 0.22). This may indicate that these two variables' combined effect may represent a better firm performance, but this is yet to be confirmed. Finally, the positive relationship between environmental hostility and the DL (ρ = 0.32), may reflect the sensitivity of the founder-manager to the actions of their main competitors.

A hierarchical moderated regression analysis was conducted to test the hypotheses (Cohen & Cohen, 1983), with a process centered on the independent and control variables' mean in order to minimize multicollinearity (Aiken and West, 1991). The results indicate that multicollinearity was not a problem in the analysis. Table 2 shows the results for different regression

models. Model 1 shows only the control variables. Model 2 adds the effect of the EO and Model 3 adds the DL' direct effect. The Model 2 results are consistent with previous studies as they show a positive effect of EO on firm's performance ($\beta = 0.26$, $p < 0.01$). This proves hypothesis 1 proposed in this research. In Model 3, adding the DL's direct effect on the firm's performance results in a small change ($\beta = 0.28$, $p < 0.01$), which indicates that the DL has a direct influence on firm's performance, although this is not the intent of the investigation.

The second hypothesis of this study considered a DL's moderating effect on the relationship between EO and firm's performance. To test the hypothesis, the interaction´s effect between EO and DL was added to the analysis. Model 4 shows a positive and significant interaction's effect of DL and EO on firm's performance ($\beta = 0.31$, $p < 0.01$), confirming the second research's hypothesis.

Table 2. Regression results

Independent variable	Model 1	Model 2	Model 3	Model 4
Control variables:				
Age	0.217**	0.194*	0.121*	0.138*
Environmental hostility	-0.131**	-0.154**	-0.101**	0.140*
Main effects:				
H1: Entrepreneurial orientation		0.263***	0.213**	0.205***
Dominant logic			0.281***	0.247***
Interaction effect:				
H2: Entrepreneurial orientation x dominant logic				0.314***
F	3.018***	3.844***	4.622***	5.128***
R-square	0.101	0.172	0.184	0.225
R-square adjusted	0.098**	0.159**	0.173	0.203
Estimate Standard Error	1.334	1.011	0.988	0.921

* $p < 0.10$; **$p < 0.05$; ***$p < 0.01$

The regression equations are strong and explain between 16% and 20% of the variation in the dependent variables, which is acceptable. Moreover, to better understand the interaction nature, the EO's effect on firm 's performance was plotted for both low and high DL (Aiken and West, 1991), as shown in Figure 1. The graph suggests that when the DL is low, a good firm performance is not obtained, but when the DL is high, there is a better firm performance.

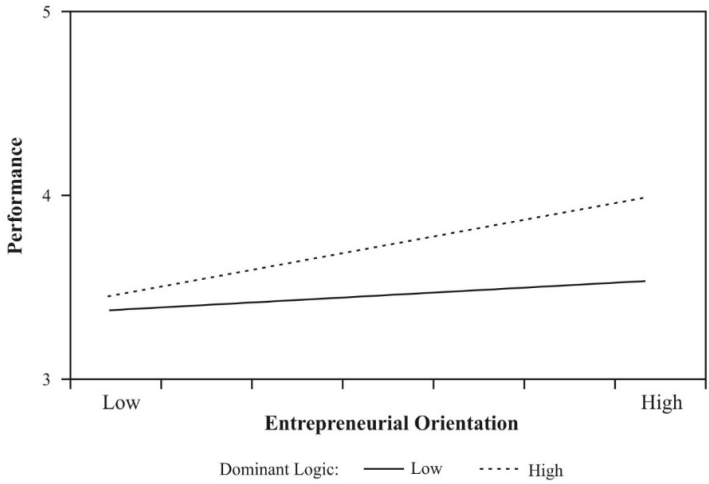

Figure 1. Moderating effect of dominant logic on the entrepreneurial orientation-performance relationship

Limitations and future research

The results of this research should be seen in the light of their limitations. First, there is no reason to believe that the results can be extended to firms with other features, including other contexts. For the enterprise's type (micro) and context (Mexico), the environmental hostility was significant, which may not necessarily occur in other research designs. Another limitation is the evaluation of the scales, as those were only made by the founder-manager. This may make sense for small size firms, in which, despite being in operation for several years, the founder-manager's dominant logic prevails (Hofstede, 2001). However, the debate continues over the use of multiple answers to ensure the validity of the results. The validation could come from those who are closely monitoring the operation and firm's performance internally, and those outside the company who are familiar with the firm's performance.

One more limitation of this work is the lack of previous studies that have used a scale to assess the DL. This paper proposes a scale based on the Von Krogh et al. (2000), proposal; however, the confirmatory factor analysis gave the pattern to eliminate internal conceptualization. In the scope of this work it is difficult to confirm if the DL can be understood just with the external conceptualization.

The limitations discussed here can be overcome in future research. Development of a DL rating scale is necessary. The results achieved in this work can be useful in this regard, considering the aspects of internal character

and major importance. a research paper focused exclusively on the DL scale development is in its own an important contribution to knowledge creation. This is evidenced by research papers that have developed scales to assess other constructs, such as entrepreneurial passion (Cardon, Gregoire, Stevens and Patel, 2013), business' alert (Tan, Kacmar and Busenitz, 2012), and even the reflection that exists on EO's assessment scales (Covin and Wales, 2012).

The DL is a construct with a highly cognitive content; however, future research could consider studying it in combination with other constructs, such as personality or intelligence. This combination could help to better understand the style, conduct and behavior of strategic decision makers in an organization.

Comparative work can also contribute to a better understanding of the EO in an organization. It would be interesting to know how the organizational culture type influences the decision making style (Hofstede, 2001). Finally, whenever possible, it is necessary to include quantitative variables to measure the firm's performance. In a microenterprise, the founder-manager has to perform several tasks at the same time that cannot be delegated. Given this, financial firm's control is virtually impossible, since it is well known that strategic planning of this nature in firms is also nonexistent.

Conclusion

This work result leads us to believe that the microenterprise's performance is slightly better when it involves an analysis of the external environment surrounding the firm. In other words, the external conceptualization of the DL helps improve the relationship between EO and firm performance. This result confirms that the relationship between EO and performance improves when considering other variables involved in this relationship (Covin, Green and Slevin, 2006, Wiklund and Shepherd, 2003). In the same perspective, the results support the idea that the context in which the company operates also influences the relationship between EO and performance (Walter, Auer and Ritter, 2006). This conclusion can be seen in the influence that environmental hostility has as a control variable on EO and performance relationship, shown in previous works (Parida, Westerberg, Ylinenpää and Roininen, 2010, Wiklund and Shepherd, 2003).

Due to the firms' size discussed in this paper, it is interesting to comment on the dimensions that were eliminated from both the EO and the DL, which were identified after performing confirmatory factor analysis. With respect to EO, innovativeness is not a necessary condition for maintaining competitiveness. In this case, autonomy, as EO's dimension, is irrelevant due

to the decision-making centralization. We believe that the same ocurrs with the DL's internal conceptualization.

From the above, we believe that the position of the microenterprises is based on good external analysis and risky and timely decision making. The company must take risks constantly and that makes it a proactive firm. The environmental hostility, as a control variable, was shown to have a negative relationship with performance, which is also related to competitive aggressiveness.

These results lead us to conclude that the firm's own characteristics, such as size, limited resources and market share, make its environment more competitive, even hostile, so that firms can decide to use aggressive practices. It is important to add that, through the founder-manager relationship, DL is emphasized among the competition, customers and consumers.

Finally, the results of this work contribute to the proposition that the relationship between two variables can be improved when incorporating a third contingent variable. In this case, the DL falls directly on the founder-manager relationship, so that their skills directly influence the firm's performance.

As the firm's structure becomes larger, the founder-manager's DL influence decreases, due to the incorporation of new positions, new visions and then the new DL is more inclusive and participatory. However, previous studies have also highlighted the fact that the EO is not the only variable that can explain the firm's performance. In this work, the EO only explains about 16% of the firm's performance and its combination with DL about 20%.

References

Aiken, L. S., West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* Newbury Park, CA: Sage.

Anderson, J. C., Gerbing, D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423.

Autio, E. (1997). New Technology-based firms in innovation networks symplectic and generative impacts. *Research Policy, 26*(3), 263-281.

Bagozzi, R. P.; Yi, Y. (1988). On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science, 16*(1), 74-94.

Basso, O., Fayolle, A., Bouchard, V. (2009). Entrepreneurial Orientation: The making of a concept. *Entrepreneurship and Innovation, 10*(4), 313-321.

Bentler, P. M., (1992). *EQS Structural Equations Program Manual.* Los Angeles: BMDP Statistical Software.

Bettis, R. A., Prahalad, C. K. (1995). The Dominant Logic: Retrospective and extension. *Strategic Management Journal, 16*(1), 5-14.

Brush, C. G., Vanderwerf, P. A. (1992). a comparison of methods and sources for obtaining estimates of new venture performance. *Journal of Business Venturing, 7*(2), 157-170.

Cardon, M. S., Gregoire, D. A., Stevens, C. E., Patel, P.C. (2013). Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of Business Venturing, 28*(3), 373-396.

Cohen, J., Cohen, P. (1983). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences.* Hillsdale, NJ: Erlbaum.

Cooper, A. C. (1993). Challenges in predicting new firm performance. *Journal of Business Venturing, 8*(3), 241-254.

Cotê, L., Langley, A., Pasquero, J. (1999). Acquisition strategy and dominant logic in an engineering firm. *Journal of Management Journal, 36*(7), 919-952.

Covin, J. G., Slevin, D. P. (1989). Strategic management of small firms in hostile and benning environments. *Strategic Management Journal, 10*(1), 75-87.

Covin, J. G., Slevin, D. P. (1990). New venture strategic posture, structure, and performance: An industry life cycle analysis. *Journal of Business Venturing, 5*(2), 123-135.

Covin, J. G., Green, K., Slevin, D. P. (2006). Strategic Process effects on the entrepreneurial orientation-sales growth rate relationship. *Entrepreneurship Theory and Practice, 30*(1), 57-81.

Covin, J. G., Wales, W. J. (2012). The Measurement of entrepreneurial orientation. *Entrepreneurship Theory and Practice, 36*(4), 677-702.

Dess, G. G., Lumpkin, G. T., McGee, J. E. (1999). Linking corporate entrepreneurship to strategy, structure, and process: suggested research directions. *Entrepreneurship Theory and Practice, 23*(3), 85-102.

Grant, R. M. (1988). "On Dominant Logic", Relatedness and the link between diversity and performance. *Strategic Management Journal, 9*(6), 639-642.

Ginsberg, A. (1990). Connecting diversification to performance: a sociocognitive approach. *Academy of Management Review, 15*(3), 514-535.

Hofstede, G. (2001). Culture´s consequences: Comparing values, behaviors, institutions and organizations across nations. 2nd Ed. Thousand Oaks, CA: Sage

Jöreskog, K. G., Sörbom, D. (1996). *LISREL 8: The Simples Command Lenguages*. Chicago: Scientific Software International.

Kunkel, S. W. (2001). Toward a typology of entrepreneurial activities. *Academy of Entrepreneurship Journal, 7*(1), 75-90.

Lumpkin, G. T., Dess, G. (1996). Clarifyring the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review, 21*(1), 135-173.

Lumpkin, G. T., Dess, G. (2001). Linking Two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing, 16*(5), 429-451.

Marino, L., Stradholm, K., Steensma, H. K., Weaver, K. M. (2002). The moderating effect of national culture on the relationship between entrepreneurial orientation and strategic alliance portfolio extensiveness. *Entrepreneurship Theory and Practice, 26*(4), 145-160.

Montiel, C. H., Nuño, P. J. P., Solé, P. F. (2012). The entrepreneurial orientation-dominant logic-performance relationship in new ventures: an exploratory quantitative study. *Brazilian Administration Review, 9*(special issue), 60-77.

Montiel, C. H., Solé, P. F., Palma, Y. (2012). Mapping the intellectual structure of entrepreneurship research: Revisiting the invisible college. *Revista Brasileira de Gestao de Negócios, 14*(42), 41-58.

Miles, M. P., Covin, J. G., Heeley, M. B. (2000). The relationship between environmental dynamism and small firm structure, strategy, and performance. *Journal of Marketing Theory and Practice, 8*(2), 63-74.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science, 29*(7), 770-791.

Miller, D. (2011). Miller (1983) Revisited: a reflection on EO research and some suggestions for the future. *Entrepreneurship Theory and Practice, 35*(5), 837-894.

Naman, J. L., Slevin, D. P. (1993). Entrepreneurship and the concept of fit: a model and empirical test. *Strategic Management Journal, 14*(2), 137-153.

Naranjo, E., Campos, M. (2011). *GEM Mexico 2011 Report*. United States: Global Entrepreneurship Monitor.

Parida, V., Westerberg, M., Ylinenpää, H., Roininen, S. (2010). Exploring the effects of network configurations on entrepreneurial orientation and firm performance: An empirical study of new ventures and small firms. *Annals of Innovation and Entrepreneurship, 1*(1), 1-13.

Poon, J. M. L., Ainuddin, R. H., Junit, S. A. (2006). Effects of self-concept traits and entrepreneurial orientation on firm performance. *International Small Business Journal, 24*(1), 61-82.

Prahalad, C. K., Bettis, R. A. (1986). The dominant logic: a new linkage between diversity and performance. *Strategic Management Journal, 7*(6), 485-501.

Premkumar, G., King, W. R. (1994). Organizational characteristics and information systems planning: An empirical study. *Information Systems Research, 5*(2), 75-109.

Rauch, A., Wiklund, J., Lumpkin, G. T., Freese, M. (2009). Entrepreneurial orientation and business performance: Cumulative empirical evidence. *Entrepreneurship Theory and Practice, 33*(3), 761-788.

Rosenberg, M., (1968). *The Logic of Survey Analysis*. New York: Basic Books.

Stevenson, H. H., Jarrillo, J. C. (1990). a paradigm of entrepreneurship: Entrepreneurial management. *Strategic Management Journal, 11*(4), 17-27.

Tan, J., Kacmar, K. M., Busenitz, L. (2012). Entrepreneurial alertness in the pursuit of new opportunities. *Journal of Business Venturing, 27*(1), 77-94.

Von Krogh, G., Erat, P., Macus, M. (2000). Exploring the link between dominant logic and company performance. *Creativity and Innovation Management Journal, 9*(2), 82-83.

Walter, A., Auer, M., Ritter, T. (2006). The impact of network capabilities and entrepreneurial orientation on university spin-off performance. *Journal of Business Venturing, 21*(4), 541-567.

Wang, C. L. (2008). Entrepreneurial orientation, learning orientation, and firm performance. *Entrepreneurship Theory and Practice, 32*(4), 635-657.

Wiklund, J., Shepherd, D. (2003). Knowledge-Based resources, entrepreneurial orientation, and the performance of small and medium-sized business. *Strategic Management Journal, 24*(13), 1307-1314.

Wiklund, J., Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of Business Venturing, 20*(1), 71-91.

Zahra, S. A., Garvis, D. M. (2000). international corporate entrepreneurship and firm performance. the moderating effect of international environmental hostility. *Journal of Business Venturing, 15*(5-6), 469-492.

Abstrakt (in Polish)

Przez ostatnie 30 lat badania nad Orientacją Przedsiębiorczą (OP) dostarczyły wielu cennych informacji dotyczących strategii, przedsiębiorczości oraz wydajności na poziomie firmy. W świecie przedsiębiorczości, mikroprzedsiębiorstwa odgrywają szczególną rolę w biznesowym kontekście gospodarki. Nie były one jednak dotychczas wystarczająco obecne w badaniach nad OP. Artykuł bada relację między OP a wydajnością w grupie mikro-przedsiębiorstw meksykańskich i obejmuje Dominującą Logikę (DL) jako zmienną moderującą tę relację. Wyniki wykazują, iż zmienne dotyczące podejmowania ryzyka, proaktywności, oraz agresywnej konkurencji z OP wpływają na wydajność mikro-przedsiębiorstw. Ponadto, zewnętrzna konceptualizacja DL moderuje relację między OP i wydajnością. Artykuł pokazuje wnioski płynące z badania, jak również ograniczenia i przyszłe metody prowadzenia badań nad tym tematem.

Słowa kluczowe: *orientacja przedsiębiorcza, dominująca logika, wydajność firmy, mikro-przedsiębiorstwa.*

Entrepreneurial Orientation (EO) and Performance of Government-Linked Companies (GLCs)

*Wei-Loon Koe**

Abstract

Quite often, people have negative views on government-linked companies (GLCs) due to the unsatisfactory performance of some key players. In order to improve the performance of GLCs in the country, Malaysian government implemented GLC Transformation Program (GLCT) in 2004. As the program is approaching its ending phase, some efforts are needed to assess the performance of GLCs. This study aimed to examine the influence of EO dimensions on the performance of GLCs. The sample of this study consisted of 153 subsidiaries and branches of G20. Based on the multiple regression analysis performed, this study found that all the five dimensions in EO, namely innovativeness (INNO), pro-activeness (PROA), risk-taking (RISK), competitive aggressiveness (COMP) and autonomy (AUTO) recorded significant positive effects on performance of GLCs. Competitive aggressiveness was identified as the most important factor that influences the performance of GLCs. As such, all the hypotheses developed for this study were supported. The results suggested that EO is not only suitable to be applied in privately owned companies, but also in GLCs. Hence, GLCs should not be perceived as public entities and they should be more entrepreneurial in managing their organizations to achieve high performance. Furthermore, this study also verified that EO is a good determinant of GLCs' performance. At the end of this paper, recommendations for future research have been put forth.

Keywords: *entrepreneurial orientation (EO), firms, governmental-linked companies (GLCs), performance.*

Introduction

Government-linked companies (GLCs) can be considered as an important driver of national development. In Malaysia, they account for 54% of capital market in Kuala Lumpur composite index, hire about 5% of the workforce, provide strategic utilities and services to the public, execute the country's industrial policy, establish international linkages and most importantly develop the Bumiputera community (PCG Secretariat, 2005). However, due to the poor performances of some key players such as Malaysia Airline System

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(MAS) and Proton Holdings, they usually give people negative impressions (Lau and Tong, 2008). Quite often, general public perceives them as bureaucratic, unprofitable, high in debts, low in returns and requiring multiple assistance from the government.

Knowing the importance of GLCs and the unsatisfactory performance of certain major players, government has initiated several strategies to improve the conditions. One of them is the unveiled GLC Transformation Program (GLCT), a program which aims to transform GLCs into high-performing organizations by 2015. The program was initiated by Malaysian former Prime Minister Tun Abdullah Ahmad Badawi in 2004. It is worth to highlight that one of the underlying principles of GLCT is "performance focus". Specifically, to achieve the objectives of this program, Malaysian Directors Academy (MINDA) was established to equip the top management of GLCs with world-class knowledge and skills for performance improvement. As the program is approaching the final phase of its 10-year journey, it is practical to examine the performance of GLCs to see whether or not the program is fruitful. Moreover, improving the performance of GLCs is a critical step in realizing the vision for competitiveness and prosperity of our nation (Najid and Rahman, 2011).

Apparently, in order for GLCs to be at par with their counterparts in the private sectors, GLCs are required to change from being bureaucratic to being entrepreneurial. Entrepreneurial orientation (EO) has been considered as a major contributor to firms' performance. Quite a number of specialist literature such as Soininen et al. (2012a), Chen et al. (2012); Grande et al. (2011), Hameed and Ali (2011), Hafeez et al. (2011), Fairoz et al. (2010), Madsen (2007), Ripollés-Meliá et al. (2007) and Wiklund and Shepherd (2005) have found that dimensions in EO, namely innovativeness, proactiveness and risk-taking had significant influence on performance of firms. It can be said that majority of studies on EO-performance relationship are concentrating on the three aspects of EO mentioned above; the other two, i.e.: competitive aggressiveness and autonomy, have hardly been researched in the literature. This has yielded a lacuna in the literature.

As mentioned earlier, EO has been found as a factor affecting the performance of firms. However, studies which examine the relationship between EO and firms' performance are primarily using private firms or small and medium enterprises (SMEs) as the benchmark (Soininen et al., 2012a, 2012b; Hameed and Ali, 2011; Huang and Wang, 2011; Javalgi and Todd, 2011; Avlonitis and Salavou, 2007; Keh et al., 2007; Tzokas et al., 2001; just to name a few). In addition, most of the studies which examined the performance of GLCs are associated with the effects of firm's ownership (for examples, Najid and Rahman, 2011; Boubakri et al., 2009; Razak et al., 2008,

2011; Ang and Ding, 2006; Sun et al., 2002). To date, there is a paucity of studies concentrating on the influence of EO towards performance of GLCs.

To add to the above, quite a number of existing literatures on performance of GLCs are qualitative studies; for instance, Norhayati and Siti-Nabiha (2009) have used case study in their studies. Moreover, a recent study by Omar et al. (2012) which concentrated on the effects of EO on GLCs' performance is qualitatively performed as well. It can be said that to date there is a lack of quantitative empirical research focusing on GLCs performance which specifically associated to EO.

Considering the above mentioned gaps, question such as "are dimensions in EO influence the performance of GLCs?" still remain unanswered. Therefore, this study is carried out with the aim to examine the influence of dimensions in EO, such as innovativeness, pro-activeness, risk-taking, competitive aggressiveness and autonomy on the performance of GLCs. The next section of this paper provides the literature review, research framework and hypotheses. It is then followed by discussions on research methodology. Findings will be presented in the subsequent section and the paper ends with conclusion and recommendations.

Literature review

Government-linked Companies (GLCs) in Malaysia

The term government-linked companies (GLCs) or state-owned enterprises (SOEs) or public enterprises has been used interchangeably. Lau and Tong (2008) described GLCs as companies which are controlled by government through government-linked investment companies (GLICs), the investment arms of the government. By doing so, the government has control over the appointment of board members and senior management as well as to make major decisions such as strategic, investment and restructuring. Although GLCs are profit orientated, they are also socially and environmentally responsible (Omar et al., 2012).

Without doubt, GLCs play a significant role in the development of a country. For instance, according to a report released by PCG Secretariat (2005), Malaysian GLCs account for 54% of capital market in Kuala Lumpur composite index and they employed about 5% of workforce in the country. They are also the major providers of public utilities and services such as transportation, water, power and telecommunication. Moreover, they are important in executing national industrial policy such as national car project, building up international linkages through foreign investments and joint ventures and lastly develop the Bumiputera community.

However, the performance of GLCs is still far from satisfactory. For long, GLCs have been labeled as underperformed, bureaucratic, monopolists, practicing favoritism, politically influenced or even pet government projects (The Economist, 2008). Researchers have also concluded that state-owned enterprises are less profitable and less efficient than privatized enterprises (Boubakri et al., 2009; Ramasamy et al., 2005). In the local setting, Razak et al. (2011) have found that the financial performance of GLCs were not comparable to non-GLCs.

Thus, some reforms of these companies are really needed to change the people's perceptions and also to harvest from the investment made by the people's money. As such, a 10-year program called GLC Transformation Program (GLCT) was launched in 2004, with the main aim to transform the GLCs into high performing organizations by 2015. Subsequently, the Putrajaya Committee on GLC High Performance (PCG), chaired by the Prime Minister and joined as members by heads of GLICs, was formed in 2005 to implement and oversee the initiatives executed in the program. As a result, 20 large GLCs controlled by GLICs were identified as G20 and were deemed as the focus of GLCT.

The transformation of GLCs is important because it is closely linked to Government Economic Transformation Program (ETP). As Najid and Rahman (2011) mentioned, improving the GLCs' performance is important in achieving our nations' vision for competitiveness and prosperity. Currently, GLCT is at its fourth or final phase. The latest GLCT progress report released by PCG in 2011 unfolded that GLCs are continuing on a growth path, with a remarkable 49% increased in growth in 2010 and have become stronger than before. Their other achievements include regionalization of business, improved capabilities, increased resilience, improved market perception, developed social and economic values etc. The impressive results achieved by GLCs in recent years could be caused by the successful implementation of GLCT. It could also caused by the entrepreneurial qualities exhibited by them. Since studies have not been extensively conducted to confirm this relationship, this study was performed.

Entrepreneurial Orientation (EO) and performance of firms

Entrepreneurial orientation (EO) has been described by Lumpkin and Dess (1996: 136) as 'processes, practices, and decision-making activities that lead to new entry', and 'involves the intentions and actions of key players functioning in a dynamic generative process aimed at new-venture creation'. They further pointed out that the concept was comparable to entrepreneurial management (EM) by Stevenson and Jarillo (1990) and the dimensions associated to it were originated from Miller's (1983) conceptualization.

EO has evolved from having three dimensions, namely: (i) innovativeness; (ii) risk taking and; (iii) pro-activeness (Covin and Slevin 1989, 1991) to five, with the other two known as competitive aggressiveness and autonomy (Lumpkin and Dess 1996).

For years, extensive studies have shown a significant influence of EO on performance of firms (Grande et al., 2011; Hafeez et al., 2011; Wiklund and Shepherd 2005; Covin and Slevin 1989). Specifically, Li et al. (2009) and Ripollés-Meliá et al. (2007) have confirmed the influence of EO in listed firms and established international firms respectively. As for companies of other sizes, EO has been found as a positive and relevant contributor to increase performance among small firms (Chandrakumara et al., 2011; Keh et al., 2007). Furthermore, it has also been confirmed by many previous results as a critical element to the success of small firms (Tzokas et al., 2001); for examples international expansion (Javalgi and Todd, 2011), financial performance (Hameed and Ali, 2011), sales growth (Casillas and Moreno, 2010) and employment growth (Madsen, 2007) of SMEs. In the local setting, Zainol and Daud (2011) have found that EO did have a significant influence on performance of business firms in Malaysia.

Interestingly, some contradicting results have been obtained in studies performed by Soininen et al. (2012a), in which they found EO as an individual construct did not positively relate to profitability. Their paper did show a positive influence of EO on growth, although such relationship was not confirmed by Arbaugh et al. (2009). Such a mixed result has indicated the need to re-examine the EO-performance relationship in business firms. One important insight from the above studies is that the way performance is assessed would have an impact on the EO-performance relationship. Since firms' performance can be determined through measuring the firms' sales growth, market share, profitability, stakeholder satisfaction or even overall performance (Lumpkin and Dess, 1996); firms' performance measurement should be given high attention.

From the above discussion, the influence of EO on performance of firms in the private sector has been extensively performed. Unfortunately, the effort to extend this EO-performance relationship on GLCs is still low. As such, this study was conducted to shed lights on such issue. Although there were some researchers who deemed EO as a unique construct (Grande et al., 2011; Hafeez et al., 2011; Wiklund, 1999), Lumpkin and Dess (1996) have urged to view it as a multidimensional construct because the dimensions of EO may vary independently subject to the context of environment and organization. Following Casillas and Moreno (2010), Hughes and Morgan (2007) and Li et al. (2009), this study regarded EO as having multiple dimensions, which consisted of (i) innovativeness; (ii) pro-activeness; (iii) risk taking; (iv)

competitive aggressiveness and; (v) autonomy. The discussions below further explain the effects of these five dimensions on the performance of firms. Research framework and hypotheses are presented in the following sections as well.

Research framework and hypotheses

Innovativeness

Innovativeness is closely related to Schumpeterian "process of creative destruction". According to Lumpkin and Dess (1996: 142), it "reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes." Regardless the market instability, firms were required to sustain a continuous state of innovativeness because innovation played an important part in determining the performance and success of firms (Hult et al., 2004). Firms which practiced innovative behavior were found to have higher performance (Awang et al., 2009). Indeed, innovativeness has been proven positively related to financial performance (Soininen, 2012b; Hameed and Ali, 2011), market share growth (Fairoz et al., 2010) and product performance (Hughes and Morgan, 2007) of firms. Similarly, Casillas and Moreno (2010) concluded higher growth rate of firms could be generated through more innovative practices in firms. As for non-private-owned sectors, innovation as a result from knowledge management initiatives did bring better organizational performance among GLCs (Rahman and Shariff, 2009). All the studies above have unanimously agreed that innovativeness positively affects performance and firms. Such consensus has led to the following hypothesis:

H1: There is a positive relationship between innovativeness and performance of GLCs.

Proactiveness

Pro-activeness suggests "a forward-looking perspective that is accompanied by innovative or new-venturing activity" (Lumpkin and Dess, 1996: 146). Firms which possessed this quality were able to look for new business opportunities for the reason of improving their financial performance during recession (Soininen, 2012b). Casillas and Moreno (2010) indicated that higher proactiveness promotes higher growth rate in sales, simply because firms are more aggressive in searching and capturing business opportunities. True, Fairoz et al. (2010) also found that market share growth was significantly affected by proactiveness. This dimension which is characterized by willingness to take high-risk actions is also a vital contributor to new product performance (Avlonitis and Salavou, 2007). In addition, Hughes and Morgan

(2007) confirmed a significant correlation between proactiveness product performance and customer performance among young high-technological firms. As comparable to the previous dimension, the proactiveness-performance relationship has reached a consensus among the previous researchers. Therefore, the hypothesis was developed as follow:

H2: There is a positive relationship between proactiveness and performance of GLCs.

Risk-taking

Assuming risk has been regarded as a quality which is very related to entrepreneurship. Risk-taking, as delineated by Lumpkin and Dess (1996: 144), includes behavior such as "incurring heavy debt or making large resource commitments, in the interest of obtaining high returns by seizing opportunities in the marketplace. Risks and returns are inseparable. For instance, Soininen et al. (2012a) concluded that the higher the risk-taking orientation the higher the firms' profitability. Similarly, Hameed and Ali (2011) also found a direct and distinct effect of this EO dimension on firms' financial performance. Meanwhile, Fairoz et al. (2010) recorded a positive significant relationship between it and market share growth. On the contrary, Casillas and Moreno (2010) did not confirm that risk-taking positively influence growth. Hughes and Morgan (2007) also found no correlation between risk-taking and performance. During economic downturn, risk-taking was found not able to guarantee financial performance of firms (Soininen et al., 2012b). Interestingly, this dimension was found to have a "U"-shaped curvilinear relationship with firms' performance, which showed that high-risk taking firms could outperform the moderate-risk taking firms (Awang et al., 2009). Due to the inconsistencies of findings in existing studies, it indicated that influence of risk-taking on performance of firms required a re-examination. As such, the hypothesis below was constructed:

H3: There is a positive relationship between risk-taking and performance of GLCs.

Competitive aggressiveness

Competitive aggressiveness refers to "a firm's propensity to directly and intensely challenge its competitors to achieve entry or improve position, that is, to outperform industry rivals in the marketplace" (Lumpkin and Dess, 1996: 148). It is believed that firms which are aggressive are able to compete with their rivals in the industry and sustain their business. Researchers who have included this dimension in their EO construct have confirmed its impact on firms' innovation performance (Madhoushi et al., 2011). On the contrary, Casillas and Moreno (2010) found no relationship between competitive

aggressiveness and growth due to the dual-condition, both active and passive competitive aggressiveness. Similar result was also obtained in Hughes and Morgan (2007). The contradicting results indicated the need to re-study the effects of competitive aggressiveness on firms' performance. Hence, the hypothesis was suggested as below:

H4: There is a positive relationship between competitive aggressiveness and performance of GLCs.

Autonomy

Lumpkin and Dess (1996: 140) explained autonomy as "independent action of an individual or a team in bringing forth an idea or a vision and carrying it through to completion." The significant positive relationship between autonomy and firms performance has been confirmed by Awang et al. (2009). However, such relationship was not proven by Casillas and Moreno (2010) and Hughes and Morgan (2007). The mixed results obtained by the previous researchers showed the need to investigate the relationship between autonomy and firms' performance. Thus, the following hypothesis was suggested:

H5: There is a positive relationship between autonomy and performance of GLCs.

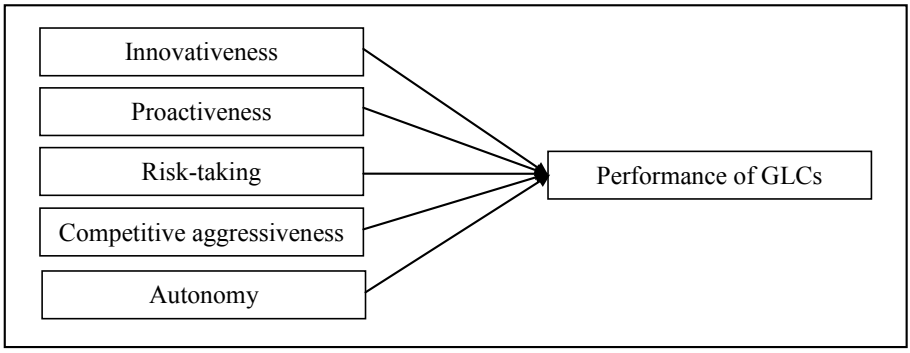

Figure 1. Research framework

Methodology

Population and sample

The sample of this study comprised of subsidiaries, including their branches of G20. The selected GLCs were represented by their respective top-management such as chief executive officer (CEO), general manager or senior

executive. It is important to note that G20 refers to GLCs which are controlled by the five main GLICs, they are Khazanah Nasional Berhad (KNB), Permodalan Nasional Berhad (PNB), Lembaga Tabung Angkatan Tentera (LTAT), Lembaga Tabung Haji (LTH) and Kumpulan Wang Simpanan Pekerja (KWSP). Although the name G20 is given, it actually consists of 19 GLCs due to strategic exercises such as mergers, demergers and corporate restructuring. a total of 250 GLCs were selected as the sample. Of the 250 questionnaires sent, 167 were returned and 14 were unusable. Thus, the final sample comprised 153 GLCs. It indicated a response rate of 61.2%. The response rate was considered high and acceptable, compared to studies sampled on private firms which was about 20% to 30% (Zainol and Daud, 2011; Li et al., 2009; Hughes and Morgan, 2007) or even just around 10% (Casillas and Moreno, 2010).

Research instrument and data collection

As this study was quantitative in nature, questionnaire survey was regarded as appropriate. The instrument used in this study was a self-administered questionnaire. Items used by previous researchers were adapted in the questionnaire to ensure content validity of scale used. As the items originated in Western countries, slight modifications such as simplification of complex sentences have been performed to ascertain the items fit the context of Malaysia. All items were worded in English because the respondents were top executives of GLCs, they possessed high proficiency in English. In order to increase the response rate, the data collection was conducted through a three-step process. First, the researcher e-mailed the questionnaires to respondents which held valid e-mail addresses. For the rest, traditional mail method was used. Then, a first-reminder was sent to the respondents after one month and a second-reminder was sent to respondents one month after the first-reminder.

Variables measurements

All items for EO were adapted from Hughes and Morgan (2007), they covered the five dimensions of EO and gauged on five-point Likert scale (1 = “strongly disagree” to 5 = “strongly agree”). a total of 18 items were developed to capture the EO dimensions of innovativeness (INNO – three items), proactiveness (PROA – three items), risk-taking (RISK – three items), competitive aggressiveness (COMP – three items) and autonomy (AUTO – six items). Meanwhile, items for firm performance were adapted from Li et al. (2009), which assessed the performance (PERF) in regards to efficiency (three items), growth (three items) and profit (three items). All items used five-point Likert scale ranged from 1 = “strongly disagree” to 5 = “strongly agree.” Efficiency was determined by respondents’ satisfaction on return

on investment (ROI), return on equity (ROE) and return on assets (ROA). Growth was assessed by respondents' satisfaction on sales growth, employee growth and market share growth. Profit was measured through respondents' satisfaction on return on sales, net profit margin and gross profit margin.

Reliability and validity

The stability or consistency of items measuring the variables, also known as reliability, can be determined through internal consistency (Sekaran and Bougie, 2009). Cronbach's alpha (α) is considered to be the most popular indicator of internal consistency, the α-values of variables used in this study are shown in Table 1. The α-values of most variables were acceptable with $\alpha > 0.7$ except for AUTO ($\alpha > 0.8$), which was preferable (Pallant, 2011). In comparison, the α-values of INNO and COMP were slightly lower than Hughes and Morgan (2007); while the other two variables (PROA and RISK) had better internal consistency reliability than the previous researchers.

Table 1. Internal consistency reliability

Variables	Cronbach's Alpha (α)	
	Current Study	Previous Study
INNO	0.71	Hughes and Morgan (2007) = 0.81
PROA	0.76	Hughes and Morgan (2007) = 0.75
RISK	0.79	Hughes and Morgan (2007) = 0.77
COMP	0.74	Hughes and Morgan (2007) = 0.75
AUTO	0.86	Hughes and Morgan (2007) = 0.86
PERF	0.71	N/A

In order to ensure that the items were able to measure the desired variables, the questionnaire was validated by experts from both academics and industry sectors such as academicians and managers. Thus, face validity of the instrument was confirmed. As there were 153 sample cases in this study, conducting factor analysis to further validate the construct validity was deemed viable because it has exceeded the minimum requirement of 50 cases for factor analysis (Hair et al., 2006). Thus, exploratory factor analysis with principal components extraction and Varimax rotation was performed for both independent and dependent variables.

For EO, the Kaiser-Meyer-Olkin value was 0.61, exceeding the minimum threshold of 0.60 (Pallant, 2011). Moreover, Barlett's Test of Sphericity was significant as well (Approx. $\chi 2 = 1474.13$; df = 300 and Sig. = 0.00). Both KMO and Barlett's statistics verified that factor analysis was appropriate to be conducted. The rule of Eigenvalue > 1.0 was followed and only factors with factor loading >0.5 were retained for practical significance (Hair et al., 2006).

Table 2 depicts the results of factor analysis for EO. Based on the results, it was found that all items for EO have been successfully loaded into five dimensions. The cumulative percentage of variance explained was 63.43%, indicating that the factors were sufficient (Hair et al., 2006).

Table 2. Factor Analysis of EO

Items	Components				
	1	2	3	4	5
Innovativeness (INNO)					
Actively introduce improvements and innovations	0.66				
Seek out new ways of doing things	0.60				
Creative in methods of operation	0.57				
Proactiveness (PROA)					
Take initiatives in every situation		0.79			
Initiate actions to which other organizations respond		0.69			
Excel at identifying opportunities		0.58			
Risk-taking (RISK)					
"Risk-taker" is considered a positive attribute			0.73		
Explore and experiment for opportunities			0.54		
Take calculated risks with new ideas			0.52		
Competitive Aggressiveness (COMP)					
The business is intensively competitive				0.63	
Take bold or aggressive approach when competing				0.60	
Undo and out-maneuver the competition				0.58	
Autonomy (AUTO)					
Freedom and independence in doing works					0.78
Make and instigate changes in performing jobs					0.77
Freedom to communicate without interference					0.73
Authority and responsibility to act alone					0.60
Act and think without interference					0.52
Access to all vital information					0.51
Eigenvalues	3.85	3.09	2.51	2.12	1.78
Cumulative Variance Explained (%)	17.41	31.78	43.83	54.30	63.43

Table 3 illustrates the factor analysis of firm performance (PERF). The KMO measure of sampling adequacy obtained was 0.77; which has passed the lowest base of 0.6 (Pallant, 2011). Meanwhile, Barlett's Test of Sphericity was significant at p-value = 0.00, approx. $\chi 2$ = 351.73 and df = 25. Again, the outcomes indicated the suitability of factors analysis for PERF. All the nine items with factor loading values > 0.5 were successfully loaded into one factor. The cumulative percentage of variance explained was 64.98%.

Table 3. Factor Analysis of Performance (PERF)

Items	Component
	1
Performance (PERF)	
Satisfied with return on assets	0.85
Satisfied with return on equity	0.82
Satisfied with sale growth	0.77
Satisfied with employee growth	0.76
Satisfied with return on investment	0.75
Satisfied with market share growth	0.68
Satisfied with net profit margin	0.63
Satisfied with return on sales	0.59
Satisfied with gross profit margin	0.56
Eigenvalues	4.52
Cumulative Variance Explained (%)	64.98

Findings and discussions

Descriptive analysis

The information of the characteristics of GLCs in this study is presented in Table 4. The results indicated that about one third of the GLCs were located in central region (N = 52, 34%), followed by southern region (N = 35, 23%), northern region (N = 29, 19%), east coast (N = 26, 17%) and only 11 GLCs (7%) were from East Malaysia. In terms of the types of industry, 63 GLCs (41%) were in servicing, 47 (31%) in manufacturing, 29 (19%) in other types of industry and 14 (9%) in agriculture. As far as their age was concerned, it was found that more than half of the GLCs were established more than 10 years ago (11 to 15 years = 41 GLCs or 27% and more than 16 years ago = 64 GLCs or 42%). It was followed by GLCs which have existed for 6 to 10 years (N = 32, 21%) and for less than 5 years (N = 16, 11%).

Table 4. Characteristics of firms

Characteristics	N = 153	
	F	%
Location		
Northern Region - *Perlis, Kedah, Pulau Pinang and Perak*		
Central Region - *Kuala Lumpur, Putra Jaya, Selangor and Negeri Sembilan*	29	18.95
Southern Region - *Melaka and Johor*	52	33.99
East Coast - *Pahang, Terengganu and Kelantan*	35	22.88
East Malaysia - *Sabah, Sarawak and Labuan*	26	16.99
	11	7.18

Type of Industry		
Manufacturing	47	30.72
Servicing	63	41.17
Agriculture	14	9.15
Others	29	18.95
Years of Establishment		
< 5 years	16	10.45
6 – 10 years	32	20.92
11 – 15 years	41	26.80
> 16 years	64	41.83

Mean score and correlation analysis

Table 5 summarizes the information on means and standard deviations (S.D.) of variables and correlations between variables. Generally, all the independent variables had mean values that ranged from 3.77 to 4.06. INNO recorded the highest mean value at 4.06 (S.D. = 0.66), while PROA noted the lowest mean at 3.77 (S.D. = 0.72). The mean value for dependent variable, PERF was 4.31 with S.D. of 0.69.

Correlation was conducted to identify the strength and direction of relationship between two variables (Pallant, 2011). As this study employed interval level variables, Pearson product-moment correlation coefficient (r) was determined (Pallant, 2011; Cooksey, 2007). As explained by Elifson et al. (1998), the r-value should range from 0 (no relationship) to 1 (perfect relationship). They further suggested that r-value which ranged from 0.01 to 0.30 should be considered as weak, from 0.31 to 0.70 it should be regarded as moderate and from 0.71 to 0.99 it should be interpreted as strong. However, it is important to note that all the r-values obtained were less than 0.70 (highest r = 0.64); as such, there was no problem of multicollinearity and all variables were retained (Pallant, 2011).

Results in Table 5 indicated that significant relationships (p-value < 0.05) existed between pairs of independent variables, except between INNO and PROA and RISK and AUTO. In terms of relationships between independent and dependent variables, all relationships were found to be statistically significant at p-value < 0.05. In other words, INNO ($r = 0.46$, $p < 0.01$), PROA ($r = 0.18$, $p < 0.05$), RISK ($r = 0.55$, $p < 0.01$), COMP ($r = 0.64$, $p < 0.01$) and AUTO ($r = 0.33$, $p < 0.01$) were found to be significantly and positively correlated to PERF. Based on the suggestion by Elifson et al. (1998), all strengths of relationships between PERF and EO dimensions were moderate, except for PROA which was weak.

Table 5. Mean, standard deviation and Pearson correlation coefficient

	Mean	S.D.	INNO	PROA	RISK	COMP	AUTO	PERF
INNO	4.06	0.66	1					
PROA	3.77	0.72	0.23	1				
RISK	3.94	0.72	0.36*	0.49**	1			
COMP	4.02	0.62	0.37*	0.39**	0.52**	1		
AUTO	3.82	0.77	0.24**	0.46**	0.32	0.31**	1	
PERF	4.31	0.69	0.46**	0.18*	0.55**	0.64**	0.33**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Multiple regression analysis

There were five hypotheses suggested in this study. In testing the hypotheses, multiple regression analysis was employed. Multiple regression analysis was considered as appropriate in this study because it hypothesized that more than one independent variable explained the variance in dependent variable (Sekaran and Bougie, 2009). Table 6 summarizes the results of analysis.

Table 6. Multiple Regression Analysis

Independent Variables	(β)	T-value	P-value
COMP	0.42	6.68	0.00
RISK	0.33	5.63	0.00
INNO	0.31	5.96	0.00
AUTO	0.19	3.48	0.00
PROA	0.11	2.03	0.04
R^2	0.63		
Adjusted R^2	0.62		
F-value	51.28		0.00

Dependent Variable: PERF

The analysis revealed that data in this study fits the model well; it was confirmed by the F-statistics of 51.28 and significant at 0.00. Thus, the relationship between EO and PERF was statistically significant. The R-square obtained was 0.63 and adjusted R-square was 0.62. This indicated that 62% of change in firm performance was affected by EO while other factors accounted for the remaining 38%. The output also showed that all the five dimensions in EO, in which COMP ($\beta = 0.42$, $p < 0.01$), RISK ($\beta = 0.33$, $p < 0.01$), INNO ($\beta = 0.31$, $p < 0.01$), AUTO ($\beta = 0.19$, $p < 0.01$) and PROA ($\beta = 0.11$, $p < 0.05$)

significantly and positively influenced the performance of GLCs. In addition, the most important EO dimension which affected the performance of GLCs was competitive aggressiveness (COMP). As for the hypotheses testing, the results further denoted that H1 to H5 were supported.

Discussion

From the statistical analyses performed, this study found that dimensions in EO significantly and positively influenced the performance of GLCs. In particular, competitive aggressiveness (COMP) was identified as the most important factor, which was in contrast to Casillas and Moreno (2010) Hughes and Morgan (2007). As mentioned by Lumpkin and Dess (1996), this dimension plays a vital role in ensuring the firm to outperform the other rivals in the industry. GLCs in Malaysia are not only facing competition from local privately-owned business firms, but also the international giants. In addition, the pressure from government through various governmental programs, such as GLCT, has also changed the competitive landscape of GLCs in the country. The competitive condition has definitely caused the GLCs to aggressively and intensely seek ways to sustain in the industry.

Risk-taking (RISK) emerged as the next most important EO dimension which influenced the performance of GLCs. The finding seemed to support Soininen et al. (2012a), Hameed and Ali (2011) and Fairoz et al. (2010), in which assuming risk is related to firms' performance. As we know, risks and returns are closely related to each other. GLCs are backed by government; it is therefore comparatively easy for them to obtain the necessary resources for making investment whenever they identified new opportunities. This has definitely resulted in bold and brave decisions in making investments by the top management of GLCs.

Innovativeness (INNO) has been evidenced by Soininen (2012b), Hameed and Ali (2011), Casillas and Moreno (2010), Fairoz et al. (2010), Awang et al. (2009), Hughes and Morgan (2007) and Hult et al. (2004) as an important determinant of firms' performance. Similar to the previous studies, this study also found such a result and further confirmed the findings by Rahman and Shariff (2009) in the context of GLCs. With the aim to develop an "innovation economy", Malaysian government has continuously urged organizations from both private and public sectors to be innovative. With the establishment of governmental agencies such as Ministry of Science, Technology and Innovation (MOSTI) and Malaysia Innovation Agency (AIM), various financial and non-financial resources have been given to stimulate innovation among firms. As such, there seems no reason why GLCs are not innovative.

This study also found a significant relationship between autonomy (AUTO) and performance of GLCs. Although it was in contradiction with Casillas and Moreno (2010) and Hughes and Morgan (2007), it supported Awang et al. (2009). It is believed that the minimal interference from government and clear national vision have helped the top management of GLCs to steer their organizations well towards success. Lastly, similar to Soininen (2012b), Casillas and Moreno (2010), Fairoz et al. (2010), Avlonitis and Salavou (2007) and Hughes and Morgan (2007); proactiveness (PROA) was proven to significantly affect the performance of GLCs. This could be inferred by the increasing quality and ability of GLCs' top-management in being forward-looking and seeking new opportunities.

Conclusion

This study was performed with the aim to examine the influence of five dimensions in EO as conceptualized by Lumpkin and Dess (1996) on the performance of GLCs. It was found that about one third of GLCs in Malaysia were concentrated in the central region, majority of them were in manufacturing and servicing sectors and more than half of them were operating for more than 10 years. Statistical tests revealed that all the five dimensions in EO, namely innovativeness, pro-activeness, risk-taking, competitive aggressiveness and autonomy significantly and positively influenced the performance of GLCs. Competitive aggressiveness was identified as the most important factor influencing the performance of GLCs, followed by risk-taking, innovativeness, autonomy and proactiveness. Thus, all the hypotheses developed for this study were supported.

Implications

As mentioned by Lau and Tong (2008), people usually have negative views on GLCs. The negative image of GLCs is mainly caused by their inefficiencies and ineffectiveness in performance. This study has demonstrated that being entrepreneurial did affect the performance of GLCs. Therefore, GLCs should not perceive themselves as public entities although they are linked to government. Contrastively, they should regard themselves as entrepreneurs and practice entrepreneurial behavior. In particular, they have to be aggressive in competing with competitors, take the necessary initiatives and intensely seek for new opportunities are important ingredients to be high-performers. Being risk-taking, innovative, autonomous and proactive are other entrepreneurial qualities that GLCs should possess.

Theoretically, this study regarded EO as multidimensional instead of a unique complex construct. Thus, it shed lights on treating EO as having five multifaceted dimensions rather than three dimensions or simply a uniform

construct because the dimensions of EO vary independently (Lumpkin and Dess, 1996). It has also showed that different dimensions possessed different strength of influence on performance of firms. As Hughes and Morgan (2007) mentioned, the relationship between EO and firms' performance is complex; thus, firms are required to pursue those dimensions that are deemed appropriate to improve their performance. Furthermore, it also proved that EO is not only suitable to be used in predicting performance in privately-owned business firms, but also GLCs.

Limitations and recommendations

Of course, this study is not without any limitations. There is no doubt that EO exerts direct influence on GLCs performance. However, this relationship may be moderated or mediated by other environmental factors, for examples knowledge creation (Li et al., 2009), learning (Wang, 2008), managerial power (Davis et al., 2010) or even family involvement (Casillas and Moreno, 2010). As such, future researchers are suggested to integrate these constructs into the EO-performance studies, specifically to look at their moderating or mediating effects between EO and firms' performance. Furthermore, this study treated performance which was measured by efficiency, growth and profit as one single construct. Future studies could consider treating them separately and look at the influence of different dimensions of EO on these three types of performance. This paper also measured performance subjectively through the opinion of firm's top management. Future researchers could employ an objective method by analyzing the performance based on readily available data. Lastly, this study adopted a cross-sectional design. As performance may be affected by the economic and other business conditions at the time when data was collected, future research could consider a longitudinal design to see the effects of EO on performance over time.

References

Ang, J.S. and Ding, D.K. (2006). Government Ownership and the performance of government-linked companies: The case of Singapore. *Journal of Multinational Financial Management,* 16, 64-88.

Arbaugh, J.B., Cox, L.W., Camp, S.M. (2009). Is entrepreneurial orientation a global construct? a multi-country study of entrepreneurial orientation, growth strategy, and performance. *The Journal of Business Inquiry, 8*(1), 12-25.

Avlonitis, G.J., Salavou, H.E. (2007). Entrepreneurial orientation of SMEs, product innovativeness, and performance. *Journal of Business Research, 60*(5), 566-575.

Awang, A., Khalid, S.A., Yusof, A.A., Kassim, K.M., Ismail, M., Zain, R.S. and Madar, A.R.S. (2009). Entrepreneurial orientation and performance

relations of Malaysian Bumiputera SMEs: The impact of some perceived environmental factors. *International Journal of Business and Management, 4*(9), 84-96.

Boubakri, N., Cosset, J.C., Guedhami, O. (2009). From state to private ownership: Issues from strategic industries. *Journal of Banking and Finance, 33*(2), 367-379.

Casillas, J.C., Moreno, A.M. (2010). The relationship between entrepreneurial orientation and growth: The moderating role of family involvement. *Entrepreneurship & Regional Development, 22*(3-4), 265-291.

Chandrakumara, A., Zoysa, A.D., Manawaduge, A. (2011). Effects of the entrepreneurial and managerial orientations of owner-managers on company performance: An empirical test in Sri Lanka. *International Journal of Management, 28*(1), 139-158.

Chen, Y.C., Li, P.C., Evans, K.R. (2012). Effects of interaction and entrepreneurial orientation on organizational performance: Insights into market driven and market driving. *Industrial Marketing Management,* 41, 1019–1034.

Cooksey, R.W. (2007). *Illustrating Statistical Procedures: For Business, Behavioral and Social Science Research.* Australia: The Tilde Group.

Covin, J.G., Slevin, D.P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal,* 10, 75-87.

Covin, J.G., Slevin, D.P. (1991). a conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice,* Fall, 7-25.

Davis, J.L., Bell, R.G., Payne, G.T., Kreiser, P.M. (2010). Entrepreneurial orientation and firm performance: The moderating role of managerial power. *American Journal of Business, 25*(2), 41-54.

Elifson, K.W., Runyon, R.P., Haber, A. (1998). *Fundamental of Social Statistics.* New York: McGraw Hill.

Fairoz, F.M., Hirobumi, T., Tanaka, Y. (2010). Entrepreneurial orientation and business performance of small and medium scale enterprises of Hambantota District Sri Lanka. *Asian Social Science, 6*(3), 34-46.

Grande, J., Madsen, E.L., Borch, O.J. (2011). The relationship between resources, entrepreneurial orientation and performance in farm-based ventures. *Entrepreneurship & Regional Development, 23*(3-4), 89-111.

Hafeez, S., Chaudhry, R.M., Siddiqui, Z.U., Rehman, K.U. (2011). The effect of market and entrepreneurial orientation on firm performance. *Information Management and Business Review, 3*(6), 389-395.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006). *Multivariate Data Analysis,* (6th Ed). Upper Saddle River, NJ: Prentice Hall.

Hameed, I. and Ali, B. (2011). Impact of entrepreneurial orientation, entrepreneurial management and environmental dynamism on firm's financial performance. *Journal of Economics and Behavioral Studies, 3*(2), 101-114.

Huang, S.K., Wang, Y.L. (2011). Entrepreneurial orientation, learning orientation, and innovation in small and medium enterprises. *Procedia Social and Behavioral Sciences*, 24, 563–570.

Hughes, M., Morgan, R.E. (2007). Deconstructing the relationship between entrepreneurial orientation and business performance at the embryonic stage of firm growth. *Industrial Marketing Management*, 36, 651–661.

Hult, G.T.M., Hurleyb, R.F., Knight, G.A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management*, 33, 429-438.

Javalgi, R.G., Todd, P.R. (2011). Entrepreneurial orientation, management commitment, and human capital: The internationalization of SMEs in India. *Journal of Business Research*, 64(9), 1004-1010.

Keh, H.T., Nguyen, T.T.M., Ng, H.P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. *Journal of Business Venturing*, 22, 592–611.

Lau, Y.W., Tong, C.Q. (2008). Are Malaysian Government-Linked Companies (GLCs) creating values? *International Applied Economics and Management Letters, 1*(1), 9-12.

Li, Y.H., Huang, J.W., Tsai, M.T. (2009). Entrepreneurial orientation and firm performance: The role of knowledge creation process. *Industrial Marketing Management*, 38, 440-449.

Lumpkin, G.T., Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review, 21*(1), 135-172.

Madhoushi, M., Sadati, A., Delavari, H., Mehdivand, M., Mihandost, R. (2011). Etrepreneurial orientation and innovation performance: the mediating role of knowledge management. *Asian Journal of Business Management, 3*(4), 310-316.

Madsen, E.L. (2007). The significance of sustained entrepreneurial orientation on performance of firms - a longitudinal analysis. *Entrepreneurship & Regional Development*, 19 (March), 185-204.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29, 770-791.

Najid, N.A., Rahman, R.A. (2011). Government ownership and performance of Malaysian government-linked companies. *International Research Journal of Financial and Economics*, 61, 42-56.

Norhayati, M.A., Siti-Nabiha, A.K. (2009). a case study of the performance management system in a Malaysian Government Linked Company. *Journal of Accounting and Organizational Chang*, 5(2), 243-276.

Omar, A.R.C., Mohamad, M.R., Kader, R.A. (2012). Entrepreneurship Orientation and Malaysian State-owned Enterprises: The Management Challenges. *Proceedings in 3rd International Conference on Business and Economic Research (ICBER)*, March 12-13, 2012. Bandung, Indonesia.

Pallant, J., 2011. *SPSS Survival Manual: a Step by Step Guide to Data Analysis Using SPSS*, (4th Ed). Australia: Allen & Unwin.

PCG Secretariat. (2005). *Catalysing GLC Transformation to Advance Malaysia's Development*. Retrieved from: http://www.pcg.gov.my/PDF/PCG_Secretariat_ 29Jul05.pdf.

Rahman, B.A., Shariff, M.N.M. (2009). Knowledge-based Malaysian GLC: Are they more innovative and performing much better? *Malaysian Management Journal, 13*(1&2), 11-19.

Ramasamy, B., Ong, D., Yeung, C.H. (2005). Firm size, ownership and performance in the Malaysian palm oil industry. *Asian Academy of Management Journal of Accounting and Finance*, 1, 81-104.

Razak, N.H.A, Ahmad, R., Joher, H.A. (2008). Ownership Structure and Corporate Performance: a Comparative Analysis of Government Linked and Non-government Linked Companies from Bursa Malaysia. *Proceedings in 21st Australasian Finance and Banking Conference*, August 24, 2008.

Razak, N.H.A, Ahmad, R., Joher, H.A. (2011). Does government linked companies (GLCs) perform better than Non-GLCs? Evidence from Malaysian listed companies. *Journal of Applied Finance & Banking, 1*(1), 213-240.

Ripollés-Meliá, M., Menguzzato-Boulard, M., Sánchez-Peinado, L. (2007). Entrepreneurial orientation and international commitment. *Journal of International Entrepreneurship*, 5, 65–83.

Sekaran, U., Bougie, R. (2009). *Research Methods for Business: a Skill Building Approach,* (5th Ed). West Sussex, UK: John Wiley & Sons.

Soininen, J., Martikainen, M., Puumalainen, K. and Kyläheiko, K. (2012a). Entrepreneurial orientation: Growth and profitability of Finnish small- and medium-sized enterprises. *International Journal of Production Economics, 140*(2012), 614–621.

Soininen, J., Puumalainen, K., Sjögrén, H. and Syrjä,P. (2012b),The impact of global economic crisis on SMEs: Does entrepreneurial orientation matter? *Management Research Review, 35*(10), 927-944.

Stevenson, H.H., Jarillo, J.C. (1990). a paradigm of entrepreneurship: Entrepreneurial management. *Strategic Management Journal*, 11, 17-27.

Sun, Q., Tong, W., Tong, J. (2002). How does government ownership affect firm performance? Evidence from China's privatization experience. *Journal of Business Finance Accounting, 29*(1/2), 1-28.

The Economist. (2005). *The Malay Way of Business Change: An Attempt to Revive Malaysia's Underperforming State-owned Firms.* August 18. 2005. Retrieved 10 October 2012 from: http://www.economist.com/node/4307606.

Tzokas, N., Carter, S., Kyriazopoulos, P. (2001). Marketing and entrepreneurial orientation in small firms. *Enterprise and Innovation Management Studies, 2*(1), 19-33.

Wang, C.L. (2008). Entrepreneurial orientation, learning orientation, and firm performance. *Entrepreneurship Theory and Practice*, July, 635-657.

Wiklund, J., Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of Business Venturing*, 20, 71–91.

Zainol, F.A., Daud, W.N.W. (2011). Indigenous ("Bumiputera") Malay entrepreneurs in Malaysia: Government supports, entrepreneurial orientation and firms performances. *International Business and Management, 2*(1), 86-99.

Abstrakt (in Polish)

Ludzie bardzo często mają negatywne opinie na temat firm powiązanych z rządem (GLC), co spowodowane jest niezadawalającą efektywnością głównych graczy w tej branży. W celu poprawienia efektywności firm państwowych, rząd Malezji w 2004 roku wdrożył Program Transformacji GLC. Jako iż program dobiega końca, należałoby ocenić efektywność GLC. Nasze badania objęły 153 filie i oddziały firm z grupy G20, a celem było zbadanie wpływu wywieranego przez wymiary orientacji przedsiębiorczej na GLC. Opierając się na przeprowadzonej analizie wielokrotnej regresji, badania nasze dowiodły, iż innowacyjność (INNO), proaktywność (PROA), podejmowanie ryzyka (RISK), agresywne konkurowanie (COMP) oraz autonomia (AUTO) odnotowały znaczący pozytywny wpływ na efektywność GLC. Jako takie, wszystkie hipotezy sformułowane podczas naszych badań znalazły potwierdzenie. Wyniki sugerują, że orientacja przedsiębiorcza nie tylko nadaje się do zastosowania w firmach prywatnych, lecz także w GLC. Dlatego GLC nie powinny być postrzegane jako organizacje publiczne; powinny one wykazywać większą przedsiębiorczość w zarządzaniu organizacją, by osiągnąć lepsze efekty. Ponadto, badanie zweryfikowało, że orientacja przedsiębiorcza jest dobrą determinantą efektów osiąganych przez GLC. Praca kończy się zaleceniami dotyczącymi przyszłych badań.

Słowa kluczowe: *orientacja przedsiębiorcza, firmy, firmy powiązane z rządem, efektywność.*

Entrepreneurial Intention Determinants: An Empirical Model and a Case of Iranian Students in Malaysia

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Abstract

*This study investigated entrepreneurial intention among graduate students of USM**** Engineering Campus. Applying the Theory of Planned Behavior (TPB; Ajzen), we examined the empirical model of entrepreneurial intention determinants. Although research has been conducted in entrepreneurial intention, limited study has been done among Iranian graduate students who are studying abroad. This research aims to fill this gap using Entrepreneurial Intention Questionnaire (EIQ, version 3.1). Accordingly, a survey study was applied and Iranian graduate students of the USM Engineering Campus were studied using the census method. The authors propose an empirical model and tested its reliability and validity using structural equation modeling. Data was analyzed using Spss16 and Amos18 software. Results revealed that the level of knowledge about business sources of assistance for entrepreneurs in addition to components of the TPB, affected entrepreneurial intention. Empirical model 's goodness of fit indices indicated good model fit $\chi 2=1.047$, df=2, probability 0.592; NFI= 0.981; CFI= 1.000; RMSEA=0.000). It seems that current empirical model could be a guide for future research on this important topic.*

Keywords: *entrepreneurial intention, structural equation modeling, graduate students, TPB.*

Introduction

The unemployment crisis in many countries is considered a major problem, even in advanced industrial countries. This problem can be considered as an economic illness (Kazemirad, Papzan, 2011 quoted by Ahmadzade) in developing countries, especially in our country which faces severe conditions. Each year eight hundred thousand jobseekers enter the labor market, which

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constitutes one of the main challenges in social–economic development in Iran. In fact, unemployment crisis is a threat to the whole society, especially unemployment among university graduates will have the non-compensation consequences in social, economic, and political dimensions. According to statistics, every year 270 thousand university graduates enter the job market, but the market capacity does not fulfill their employment needs (Shiri, et al., 2012). One strategy that has helped many developed and developing countries to overcome the problem of unemployment, has been the development of entrepreneurship (Hosseini, Ahmadi, 2011). It has been recognized as an important element in the dynamics of modern economies (Movahedi, Fathi, 2011).

Nowadays, entrepreneurship has developed globally in the field of industrial, manufacturing and service sectors (Heidary, et al., 2011 quoted by Parker). Entrepreneurship is a process that creates opportunities for educated people allowing them to achieve financial independence through increased innovation and new business opportunities (Souitaris, et al., 2007). Therefore, most universities are spending significant amounts of money to design a viable entrepreneurship education for their students. Harrison and Leitch (1994) analyzed the evolution of entrepreneurship education in a three-stage model. According to this model, the first approach to entrepreneurial education is to view it as a sub-set of general management education. As a reaction to this approach, the second view differentiates entrepreneurial education from the managements of large-scale organizations. The last stage provides a basis for the notion of the reintegration of management education and entrepreneurship education (Harrison, Leitch, 1994). Recently, the nature of discussion on entrepreneurial education has been shifting towards learning entrepreneurship and not about entrepreneurship itself (Cooper, 2004). Since it is difficult to find one-fits-all model for all cases, the disagreement on the issue might continue in the future as well. However, the concrete progress in entrepreneurial education during the last decades shows that these discussions are important for shaping future understandings (Gelard, Emami Saleh, 2011).

The previous studies in the literature indicated a link between education and entrepreneurship (Galloway, Brown, 2002; Henderson, Robertson, 2000). As such, receiving an adequate education may foster the entrepreneurial intention of a person. According to Garavan and O'Cinneide (1994), there is clearly a major role and need for entrepreneurship education and training. Since the education offered by a university mostly influences the career selection of students, universities can be seen as potential sources of future entrepreneurs (Gelard, Emami Saleh, 2011). Based on this fact, the entrepreneurial behavior is a result of intentions and desires of the people,

and, intention is prior to behavior; in this study, entrepreneurial intentions are considered as the main variable and graduate student were selected to study. Entrepreneurial intention is a state of mind that guides individual actions in order to create and develop a new business or entrepreneurial activity (Shiri, et al., 2012). It is also a valid tool for forecasting individual entrepreneurial conducts and activities (Krueger, Carsrud, 2000).One theory that tries to explain intentional behavior is the Theory of Planned Behavior (TPB). This theory, grounded in social psychology, is based on the premise that much human behavior is planned and is therefore preceded by intention toward that behavior (Fishbein, Ajzen, 1975). It asserts that intention is an accurate predictor of planned behavior, especially in cases where the behavior is difficult to observe, rare, or involves unpredictable time lags. Entrepreneurial behavior displays these characteristics, which explains why several empirical studies of entrepreneurship have applied the theory of planned behavior to the study of entrepreneurship from a psychological perspective (see for example, Kolvereid, Isaksen, 2006; Rotefoss, Kolveried, 2005; Krueger et al., 2000; Souitaris et al., 2007). According to Kreuger et al., (2000), entrepreneurial activity can be predicted more accurately by studying intention rather than personality traits, demographic characteristics, or situational factors.

Several theories have attempted to elucidate the determinants of entrepreneurial intention. The theory of planned behavior contends that intentions are a function of three sets of factors: attitudes toward behavior, subjective norms, and perceived behavioral control (PBC). Attitudes are defined as beliefs and perceptions regarding the personal desirability of performing the behavior, which are in turn related to expectations regarding the personal impact of outcomes resulting from that behavior (Ajzen, 1991). Subjective norms or perceived social norms are defined as individuals' perceptions about the values, beliefs, and norms held by people whom they respect or regard as important and the individuals' desire to comply with those norms. It is argued that social norms are less predictive of intentions for individuals who have a high internal locus of control (Krueger, et al., 2000). PBC is defined as the personal belief about being able to execute planned behavior and the perception that the behavior is within the decision maker's control. It is similar to Bandura's (1986) concept of self-efficacy.

In the context of entrepreneurship, the theory of planned behavior asserts that entrepreneurial intention is dependent on an individual's attitude toward the desirability of an entrepreneurial career, subjective norms including perceived family expectations and beliefs to perform the behavior, and perceived behavioral control or the perceived ability to execute the intended behavior of entering entrepreneurship. According to Moriano, et al., (2011)

The TPB has been used successfully in the past to describe entrepreneurial intentions of students in the U.S. (Autio, et al., 2001; Krueger et al., 2000), The Netherlands (Van Gelderen et al., 2008), Norway (Kolvereid, 1996), Russia (Tkachev, Kolvereid, 1999), Finland, Sweden (Autio, et al., 2001), Germany (Jacob, Richter, 2005), Spain and Taiwan (Liñán, Chen, 2009; Moriano, 2005), and South Africa (Gird, Bagraim, 2008). But can this be successful in explaining entrepreneurial intentions of Iranian students? Developing countries, such as Iran, have a different psychological perspective of TPB. Our research was conducted with an aim of responding to that question, focusing on Iranian graduate student in USM.

Methodology

The population of the study included all Iranian graduate students (Master and PhD) of USM Engineering Campus in Malaysia (N=51(who were studying in 2011. These students can be viewed as being future experts and decision-makers in the field of entrepreneurship. Because of the small population, all of them were studied through census study. The Entrepreneurial Intention Questionnaire (EIQ, version 3.1) was originally developed in Spain by Moriano (2005). The EIQ comprises four subscales: attitudes towards entrepreneurship, subjective norms, PBC, and entrepreneurial intention. The third TPB component, perceived behavioral control (PBC), refers to people's perceptions of their ability to perform a given behavior. Individuals usually choose to perform behaviors that they think they will be able to control and master. This concept is therefore very similar to self-efficacy (or even the same, see Bandura, 1982). Both concepts concerned the perceived ability to perform a behavior, e.g., starting a new business. In their review of TPB, Armitage and Conner (2001) conclude that self-efficacy is more clearly defined and more strongly correlated with intentions than PCB. In fact, self-efficacy has replaced PBC in numerous studies (Krueger et al., 2000; Kolvereid, Isaksen, 2006; Moriano, 2005; Van Gelderen et al., 2008). The Cronbach alpha reliability of the EIQ subscales in previous research ranged from .76 to .87 in the Spanish sample of 281 students and from .77 to .87 in the Polish sample of 154 students (Laguna et al., 2008). EIQ was translated from English to Persian using a back-translation procedure (Hambleton, 1994). First, one collaborator translated the English version to Persian. After this, a professional translator performed the back translation of the Persian version into English. The original and back-translated English version were compared and adjusted, and the final Persian version was agreed upon by all translators. According to entrepreneurial challenges faced by entrepreneurs in developing countries such as Iran, it seems that knowledge about business

associations for entrepreneurs may affect entrepreneurial intention in addition to TPB components. This construct was measured with six items:

- Private association, NGOs and consultant firms
- Public support bodies
- Specific training for young entrepreneur
- Loans on specially favorable terms
- Technical aids for business start-ups
- Business centers

In this study Cronbach alpha for each scale was shown in Table 1. According to the table, Cronbach alpha for each of the scale used in the study should be equal to or higher than 0.7. Therefore, all the scales were reliable.

Table 1. Cronbach's alpha for reliability verification

Components	Chronbach's alpha
Subjective norm	0.76
Knowledge about business associations	0.79
Self efficacy	0.80
Attitude toward behavior	0.86

The measures were subjected to path analysis. As each of the variable included in the path analysis should have normal distribution, Shapiro – Wilk test was performed, as the sample of 51 is too small. Based on Table 2, all of the independent variables were appropriate for the path model.

Table 2. Tests of normality

	Kolmogrov- smirnov[a]			Shapiro-wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Self efficacy	.167	51	.001	.926	51	.230
Knowledge about business association	.092	51	.200*	.947	51	.310
Subjective norm	.078	51	.200*	.985	51	.753
Attitude toward behavior	.178	51	.000	.922	51	.140

* This is a lower bound of the true significance.
a. Lilliefors significance correction.

Moreover, homoscedascity of variances of residues was verified using Durbin – Watson test and can be found in the last column of model summary table. This statistics informs us about whether assumption of independent error is tenable. If this statistics be between 1/5-2/5 indicated assumption will be verify. For these data the value is 1.607, thus the assumption has been met (Table 3).

Table 3. Mode summary table for Durbin – Watson test

Model sumary[b]

Model	R	R Square	Adjuster R Square	Std. Error of the Estimate	Change Statistics					
					R Square change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.770[a]	.593	.558	.54181	.593	17.752	4	46	.000	1.607

a. Predictors: (Constant), attitudetowardthebehavior, knowledgeaboutbusinessassociations, selfefficacy, subjectivenorma.
b. Dependent Variable: intentionb.

We formed composite measures for each construct in the model by averaging scores across items representing that measure.

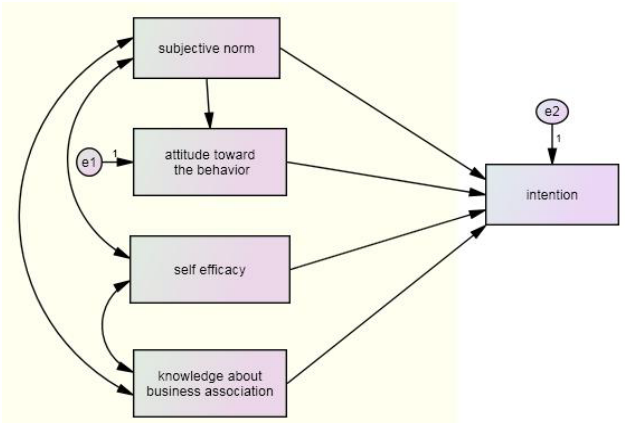

Figure 1. Proposed entrepreneurial intention model

The empirical model was tested using AMOS18 software. The goodness of the fit of the models was evaluated using the χ2 goodness of fit statistics, the Normed Fit Index (NFI) and the Comparative Fit Index (CFI). The model χ2 higher values reflect the model's worse correspondence to the data. For both relative fit-indices, as a rule of thumb, values greater than .90 are considered as indicating a good fit (Byrne, 2001, pp. 79–88). In addition, the Root Mean Square Error of Approximation (RMSEA) is computed for which values up to .08 indicate a reasonable fit of the model (Browne, Cudeck, 1992).

Findings

In order to determine the effect of independent variables on entrepreneurial intentions, Path Analysis Techniques were employed. Path analysis is multivariate technique that is used to describe both direct effects and indirect effects of independent variables on the dependent variable (Shiri, et al., 2012 quoted by Kalantari). Therefore, in this study, social norms, attitude toward behavior, self-efficacy and knowledge about business associations as independent variables and entrepreneurial intentions as a dependent variable were analyzed. The Path coefficients of the research variables are presented in figure 2. Table 4 shows direct effects, indirect effects and total effects of independent variables on entrepreneurial intentions among Iranian graduate students in USM. The direct effect equals beta coefficient in multiple regression analysis. The indirect effect of each variable equals multiplying path coefficients of all variables in a path which leads to a dependent variable. The total effect is a sum of direct and indirect effects of each variable that were presented in the path analysis diagram in Table 4. According to path coefficients which are shown in Table 4, social norms can be considered as the most important predictor of entrepreneurial intention in this study (total effect= 0.48). The second determinant of entrepreneurial intention is knowledge about business associations. Self efficacy and attitude toward behavior with total effect of 0.20 and 0.16 are the other factors affected Iranian graduate students in USM, respectively.

Table 4. Summary of information relevant to the analysis of research variables

Components	Direct effect	Indirect effect	Total effect
subjective norms	0.36	0.12	0.48
knowledge about business associations	0.29	—	0.29
Self efficacy	0.20	—	0.20
Attitude toward behavior	0.16	—	0.16

Based on the Table 2, 72.5 percent of the sample from Iranian graduate students in USM Engineering Campus were male and their average age was 31. 70.6 percent of students' fathers' education was higher education and 22 percent of their fathers' present occupation was self employment and private employment (18 and 4 percent, respectively). About 47 percent of respondent have been self-employed or the owner of a small or medium sized enterprise.

Table 5. Sample description

Variable	Categories	Frequency	Percent	Valid percent	Cumulative percent	Mean
Gender	Male	37	72.5	72.5	72.5	
	Female	14	27.5	27.5	100	
	Total	51	100	100		
Age						31
Father's education	Primary	6	11.8	11.8	11.8	
	Secondary	2	3.9	3.9	15.7	
	Diploma	5	9.8	9.8	25.5	
	Higher education	36	70.6	70.6	96.1	
	Missing	2	3.9	3.9	100	
	total	51	100	100		
Father's present occupation	Private sector	2	3.9	4	4	
	employee	9	17.6	18	22	
	Public sector	9	17.6	18	40	
	employee	30	58.8	60	100	
	Self employed or	50	98.0	100		
	entrepreneur	1	2.0			
	Retired	51	100			
	Unemployment					
	Missing					
	total					
Students' self employment and owner of a SME	Yes	23	45.1	46.9	46.9	
	No	26	51.0	53.1	100	
	Missing	49	96.1	100		
	Total	2	3.9			
		51	100			

As shown in the figure 2, there is a reasonable fit of the four-factor model to the data on the basis of a number of fit statistics ($\chi 2$=1.047, df=2, probability 0.592; NFI= 0.981; CFI= 1.000; RMSEA=0.000). Figure 2 depicts the model which includes proposed relationship and results of the model test in Amos software (β coefficients).

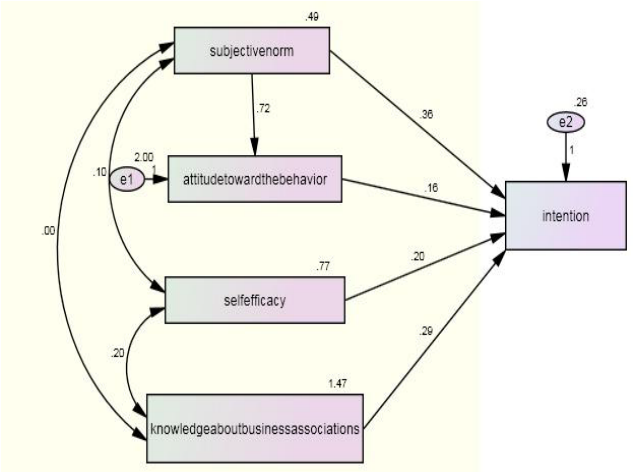

Figure 2. The empirical path model of entrepreneurial intention

Discussion and conclusion

The aim of this study was to investigate determinants of entrepreneurial intention among graduate students of the USM Engineering Campus. Remarkable results of this study were the important direct and indirect effect of social norm on entrepreneurial intention. This conclusion is in line with the studies of (Degeorge, Fayolle, 2008; Barani, Zarafshani, 2009; Barani et al., 2010; Nsurdin et al., 2009) but, it is in opposition to the results of Shiri et al., (2012). This difference may be due to the different statistical population in terms of their level of education (undergraduate students) and the place of the study. They found that relationship between social norms and entrepreneurial intentions among undergraduate students of Ilam University (Iran) were not significant, because in societies such as Iran, families prefer to work in public sector rather than private sectors or entrepreneurial ventures (Javadian, Dastmalchian, 2003).

Our results further show that in addition to components of the TPB, knowledge about business associations affected entrepreneurial intention. Therefore, it seems that this study enriches the past entrepreneurial intentions literature. We demonstrated that for graduate students entrepreneurial intentions is not only related to the attitude, social norms and self efficacy, but is also affected by knowledge about business associations. The cause of these findings may be related to economic challenges in developing countries such as limited personal and family savings and an absence of financial innovation which severely limits the growth prospects of promising startups.

In these countries, odds of a new enterprise surviving its first five years are less than 50%, is it rational for an entrepreneur to commit financial resources. Successful entrepreneurs are likely to find ways to access the greater pools of private saving in the countryside in order to start their businesses. This highlights the possible importance of knowledge about business associations for entrepreneurs in developing countries such as Iran.

The result of this study has implications for entrepreneurial policy-makers in Iran. They need to be cognizant of importance of knowledge about business associations and entrepreneurial intentions. It is therefore recommended that supportive organization such as banks, business centers etc. announce their services and universities should have effective interaction with these centers. This would help to increase entrepreneurial intention among potential entrepreneur to create knowledge-based enterprise and mitigate unemployment challenges, especially among graduate students. Moreover, access to information about business associations helps students staying abroad to return and decreases the brain drain problem. Finally, according to the literature, the existing models of entrepreneurship are based largely on research conducted in the United States and other developed countries and do not adequately describe how entrepreneurship is carried out in developing countries. Thus, entrepreneurial intention model must be indigenized, as empirical model that proposed in this study. Due to empirical testing, situational variables can be studied (Krueger, Carsrud, 1993).

References

Armitage, C. J., Conner, M. (2001). Efficacy of the theory of planned behaviour: a metaanalytic review. *British Journal of Social Psychology,* 40, 471-499.

Ajzen, I. (1991). Theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Bandura, A. (1986). *The Social Foundations of Thought and Action*. Englewood Cliffs: Prentice Hall.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist,* 37,122-147.

Barani, Sh., Zarafshani, K. (2009). a determination of the effect of attitude towards entrepreneurship, social norms, and self efficacy in predicting entrepreneurial intention among rural development management students at Payame-Noor University, Kermanshah. *Iranian Journal of Agricultural Economics and Development, 40-2*(3), 91-99.

Barani, Sh., Zarafshani, K., Del-Angizan, S., Hosseini Largani, S. M. (2010). The influence of entrepreneurship education on entrepreneurial behavior of college students in Kermanshah's Payam-Noor University: Structural Equation Modeling Approach. *Quarterly Journal of Research and Planning in Higher Education, 16*(3), 85-105.

Browne, M. W., Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods and Research*, 21, 230-258.

Cooper, S., Bottomley, C., Gordon, J. (2004). Stepping out of the classroom and up the ladder of learning: an experimental learning approach to entrepreneurship education. *Industry and Higher Education, 8*(1), 11-22.

Degeorge, J. M., Fayolle, A. (2008). Is entrepreneurial intention stable through time? First insights from a sample of French students. *International Journal of Entrepreneurship and Small Business*, 5 (1), 7-27.

Douglas, E.J., Shepherd, D.A. (2002). Self-employment as a career choice: Attitudes, entrepreneurial intentions, and utility maximization. *Entrepreneurship: Theory and Practice*, 26(3), 81-90.

Fishbein, M., Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Galloway, L., Brown, W. (2002). Entrepreneurship education at university: a driver in the creation of high growth firms. *Education+Training, 44*(8/9), 398-405.

Haidari, H., Papzan, A., Karami Darabkhani, R. (2011). Examine the relationship between organizational culture and organizational entrepreneurship components: a case of JAHAD – E- Agriculture Organization of Kermanshah Township. *Quarterly of Innovation and Creativity in Human Science, 1*(3), 45-166.

Hambleton, R. K. (1994). Guidelines for adapting educational and psychological tests: a progress report. *European Journal of Psychological Assessment*, 10, 229-244.

Harrison, R. T., Leitch, C.M. (1994). Entrepreneurship and leadership: the implications for education and development. *Entrepreneurship and Regional Development*, 6, 11-215.

Henderson, R., Robertson, M. (2000). Who wants to be an entrepreneur? Young adult attitudes to entrepreneurship as a career. *Career Development International,* 5(6), 279-87.

Javadian, M. & Dastmalchian, A. (2003). Culture and leadership in Iran: The land of individual achievers, strong family ties, and powerful elite. *Academy of Management Executive*, 17, 127-142.

Juan A. M. L., Gorgievski, M., Laguna, M., Stephan, Ute., Zarafshani, K. (2011). A cross-cultural approach to understanding entrepreneurial intention. *Forthcoming Journal of Career Development*, 1-30. Doi: 10.1177/0894845310384481.

Kazemirad, Z., Papzan, A. (2011). Predicting success of rural entrepreneurship in Kermanshah city using Artificial Neural Network (ANN). *Journal of Zonal Planning, 1*(1), 17-25.

Krueger, N. & A. Carsrud (1993). Entrepreneurial intentions: applying the theory of planned behavior. *Entrepreneurship & Regional Development, 5*(4), 315-330.

Krueger, N.F. (2000). The cognitive infrastructure of opportunity emergence. *Entrepreneurship Theory & Practice*, 24, 5-23.

Krueger, N. F., Reilly, M. D., Carsrud, A. L., (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15, 411-432.

Kolvereid, L., & Isaksen, E. (2006). New business start-up and subsequent entry into self-employment. *Journal of Business Venturing, 21*(6), 866-885.

Laguna, M., Moriano, J.A., Roznowki, B., Gómez, A. (2008). Entrepreneurship in Polish and Spanish students explained by means of the theory of planned behavior. *Studia Psychologiczne (Psychological Studies)*, 46, 27-40.

Moriano, J. A. (2005). El perfil psicosocial del emprendedor [*The psychosocial profile of the entrepreneur*]. Madrid: Consejo Económico y Social.

Movahedi, R., Fathi, H. (2011). Assessing agricultural students' attitude towards entrepreneurship. International Journal of Agriculture. *Research and Review, 1*(4), 168-173.

Nasurdin, A. M., Ahmad, N. H., Lin, C. E. (2009). Examining a model of entrepreneurial intention among Malaysians using SEM procedure. *European Journal of Scientific Research*, 33 (2), 365-373.

Noel, T. (1998). Effects of entrepreneurial education on intent to open a business: An exploratory study. *Journal of Entrepreneurship Education*, 5, 3-13.

Rotefoss, B., Kolvereid, L. (2005). Aspiring, nascent and fledgling entrepreneurs: An investigation of the business start-up process. *Entrepreneurship & Regional Development*, 17, 109-127.

Shiri, N., Mohammadi, D., Hosseini, S. M. (2012). Entrepreneurial Intention of agricultural students: effects of role model, social support, social norms and perceived desirability. scholars research library. *Archives of Applied Science Research, 4*(2), 892-897.

Souitaris, V., Zerbinati, S., Al-Laham, A. (2007). Do entrepreneurship programmers raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing, 22*(4), 566-591.

Van Gelderen, M., Brand, M., Van Praag, M., Bodewes, W., Poutsma, E., van Gils, A. (2008). Explaining entrepreneurial intentions by means of the theory of planned behavior. *Career Development International*, 13, 538-559. Doi: 10.1108/13620430810901688.

Abstrakt (in Polish)

Niniejszy artykuł bada przedsiębiorcze intencje wśród absolwentów kończących USM Engineering Campus. Stosując Teorię Planowanego Zachowania (TPB; Ajzen), zbadaliśmy model empiryczny determinant przedsiębiorczych intencji. Chociaż prowadzono już badania nad przedsiębiorczymi intencjami, niewiele badań dotyczy absolwentów uczelni znajdujących się poza granicami kraju. Nasze badanie ma na celu wypełnienie tej luki przy użyciu Kwestionariusza Przedsiębiorczych Intencji (EIQ, wersja 3.1). Ankietą objęto irańskich absolwentów USM Engineering Campus, stosując metodę cenzusu. Autorzy proponują model empiryczny. Sprawdzili jego wiarygodność i ważność, stosując modelowanie strukturalne równania. Dane analizowano przy użyciu oprogramowania SPSS16 i Amos18 . Wyniki pokazały, że poziom wiedzy o źródłach pomocy dla przedsiębiorców oraz składniki TPB wpływają na przedsiębiorcze intencje. Empiryczny model dobrego dopasowania wskazuje na dobre dopasowanie modelu $\chi 2=1.047$, $df=2$, prawdopodobieństwo 0.592; NFI= 0.981; CFI= 1.000; RMSEA=0.000. Wydaje się, że aktualny model empiryczny może być drogowskazem dla przyszłych badań nad tym ważnym tematem.

Słowa kluczowe: *przedsiębiorcze intencje, modelowanie strukturalnych równań, absolwenci, TPB.*

Evidence of Opportunity and Necessity Driven Entrepreneurship in Nigeria

Abubakar S. Garba*,Fariastuti Djafar**, Shazali Abu Mansor*

Abstract

The objective of this paper is to examine the influence of poverty, unemployment and GDP on entrepreneurship. Time series data for 31 years was collected from various official sources for the analysis. Vector autoregressive (VAR) framework was adopted to systematically capture the rich dynamic of multiple time series. Other tests conducted were unit root test, Johansen and Juselius (1990) co-integration test, Granger causality and dynamic model analysis beyond the sample. It was found that poverty and GDP influence entrepreneurship negatively, while unemployment influences entrepreneurship positively. The paper reveals the presence of both opportunity and necessity driven entrepreneurs in the country. There is a need for the government to revisit the existing policy on micro, small and medium enterprises (MSMEs) to adequately address the problem of the poor and unemployed by availing them with the opportunity to engage in entrepreneurship. Future study should consider mitigating the effect of frequent entry and exit from entrepreneurship in their data to correctly predict the effect of entrepreneurship on the economy.

Keywords: *entrepreneurship development, poverty, unemployment, GDP.*

Introduction

The potential of entrepreneurs to harness the necessary resources and create vibrant economy is increasingly being recognized in developing countries. The significance of micro, small and medium enterprises (MSMEs) has been recognized globally in terms of productivity and competitiveness of the economies. MSMEs are the primary source of job creation, nurturing ground for entrepreneurial capabilities, innovativeness as well as providing managerial competency for private sector development. MSMEs play a key role in developing countries that are characterized with high level of unemployment and poverty.

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Looking at the present realities and challenges facing Nigeria, the need to develop entrepreneurship became apparent. Developing strong, vibrant and viable MSMEs is necessary in order to solve its numerous socio-economic problems. In 2010 the estimated population of Nigeria was about 163 million people out of whom about 70% are classified as poor based on the international poverty threshold of less than 1.25 dollars per day. In 1980 the poverty incidence and estimated poor population was just 27.2% and 17.7 million, but it escalated to 69% and 112.5 million respectively in 2010. Similarly, unemployment rate was 13.1% in 2000, but rose to 21.4% in 2010. In spite of the increase in both poverty and unemployment, the Nigerian economy has achieved continuous improvement from 2005 to 2010 with the exception of 2008 where GDP growth rate slightly decreased to 5.98% and grew immediately by 6.95% in the subsequent year (NBS, 2010).

There is a great opportunity for entrepreneurship in the country and entrepreneurial activity has the potentials of addressing the incessant problem of poverty and unemployment. Entrepreneurship development requires more than a policy pronouncement, but action must be taken to provide a conducive business environment particularly for the micro and small business to emerge and prosper. It is noted that there is no previous study that examines the influence of GDP, unemployment and poverty on entrepreneurship at the same time. Generally, there is paucity of studies that examine the influence of GDP and poverty on entrepreneurship. Therefore, this paper attempts to fill this research gap by examining the influence of poverty, unemployment and GDP simultaneously on entrepreneurship in which no previous study does so in Nigeria context. The objective of this paper is to examine the influence of poverty, unemployment and GDP on entrepreneurship.

Literature review

Entrepreneurship plays an important role in boosting productivity, increasing competition and innovation, creating employment and economic prosperity (Ritche and Lam, 2006). Entrepreneurship is synonymous with business start up or creation of new organization (Keister, 2005). There are several factors influencing entrepreneurship in both developed and developing countries. The nature and dynamics of entrepreneurship is dependent on the country's level of economic development. The pattern and type of entrepreneurs are based on how socio-economic variables affect entrepreneurship in the country. The refugee/push and Schumpeterian/pull effect hypotheses provide the basic understanding of the relationship between entrepreneurship, poverty, unemployment and GDP (Audretsch et al., 2001). The relationship

between entrepreneurship and the macroeconomics variables are discussed as follows:

Entrepreneurship and Poverty: The long term analysis of economic and social development, particularly on poverty reduction, is very important in discussing any developmental issues (Szirmai, 2005). Poverty reduction should also be the ultimate goal of all development endeavors (Akoum, 2008). Poor people are motivated to engage in micro and small scale business to sustain their lives and possibly get out of poverty. They can make a difference by turning themselves into entrepreneurs to productively and economically contribute to the society. Poor economic conditions lead to higher entrepreneurial activities in many developing countries than in the developed countries. However, the frequent and high entry and exit is noted among people who have started business out of necessity.

Rosa, Kodithuwakkub and Balunya (2006) in Uganda and Sri Lanka found that poverty significantly influences entrepreneurial activity. Mulira, Namatovu and Dawa (2011) in Uganda reveal negative and significant relationship between poverty and entrepreneurship. Block and Sandner (2009) and Wanger (2005) in Germany and Verheul, Thurik, Hessel and Zwan (2010) in 27 European countries and the US discovered that there were more opportunity than necessity entrepreneurs in these countries.

Entrepreneurship becomes inevitably the last option particularly for the poor in an economy where employment opportunities are not readily available. The poor can be creative and exert high impact through radical innovations. The idea of creative destruction is built on dynamic, deliberate entrepreneurial effort to change market structures and make use of profit opportunities that exists. It is interesting to find whether high rate of entrepreneurial activity due to necessity could be translated into economic growth or not. This may depend on the situation and level of economic development of a particular country in which the entrepreneurs exist. Both opportunity and necessity entrepreneurs can be found in both developed and developing countries.

Entrepreneurship and Unemployment: There are an increasing number of studies on the relationship between unemployment and entrepreneurship. Most of the previous studies used cross sectional or longitudinal data at micro level and time series data at macro level (Meager, 1992). The entry into entrepreneurship by unemployed people has attracted the attention of many researchers and policy makers. The propensity to start a business because of unemployment is very important to public policy (Audretsch and Jin, 1994). That is why many governments in both developed and developing countries are encouraging and supporting unemployed people to start up business. Evan and Leighton (1990) in the US studied small businesses started and operated

by both unemployed and employed workers. It was discovered that entry into entrepreneurship was higher for the unemployed than for the employed people. The relationship between entrepreneurship and unemployment is not clear but empirical studies revealed two ways of relationships. One strand of the studies confirmed that unemployment stimulates entrepreneurial activity which is referred to as refugee effect, while the other body of the literature confirms that high entrepreneurial activity influences reduction of unemployment which is known as Schumpeterian effect.

Unemployment is positively related to new firm start ups in 23 OECD countries (Audretsch et al., 2001). Other studies found positive influence of unemployment on entrepreneurship (Reynolds, Storey and Westhead, 1994; Evans and Leighton, 1989 and Highfield and Smiley, 1987). While Garofi (1994) in UK, Audretsch and Fritsch (1994) in Germany indicate that unemployment is negatively related to new firm start up. Audretsch and Thurik, (2000) believe that new business could possibly generate employment thereby cutting down the rate of unemployment. Hamilton (1989) and Faria, Cuestas and Mourelle (2010) suggest that the relationship between entrepreneurship and unemployment can be bidirectional and non linear. Carree (2002) in the US found that there is no significant relationship between the variables.

In another dimension, entrepreneurial activity reduces unemployment and could have positive effect on economic performance in different ways. Stel et al. (2007) and Audretsch et al. (2001) attempted to reconcile this ambiguous relationship using data from 23 OECD countries between 1974 and 1998. Phehn-Dujowich (2012) in the US discovered that the unemployment has Granger causal effect on entrepreneurship. Storey (1991) provided an explanation which looks like a consensus on the relationship between unemployment and entrepreneurship.

Entrepreneurship and GDP: The link between entrepreneurship and GDP can be traced to Schumpeter's work which highlights the role of entrepreneurs in creating disequilibrium through the process of creative destruction (new combination). Schumpeterian entrepreneurs are productive, innovative and opportunity seekers (Sexton and Kasarda, 1992). In a period of high economic growth there will be proliferation of opportunity entrepreneurs, who make high impact and promote economic development (Mojica-Howell, Whittaker, Gebremedhin and Schaeffer, 2012 and Jones-Evans, Brooksbank and Aaron, 2006). High level of GDP may lead to increasing economic prosperity which in turn affects consumption and investment (Hartog, Parker, Stel and Thurik, 2010). The increase in consumer demand and services due to economic prosperity will create opportunities for entrepreneurs (Audretsch and Keithbach, 2004). On the other side, low GDP creates necessity entrepreneurs who start up business because of poor economic condition characterized

by limited options for wage employment due to low demand for goods and services. This situation reflects the 'push / recession hypotheses'.

Some previous studies attempted to investigate two directional relationships between GDP and entrepreneurship (Thurik, Carree, Stel and Audretsch, 2008 and Mojica-Howell et al., 2012). Other studies try to examine the influence of economic growth on entrepreneurship (Storey, 2003). Entrepreneurship is likely to be endogenous where high level of GDP has a strong incentive for opportunity based business start up. It was found in the US by Phehn- Dujowich (2012) that economic growth causes entrepreneurship (Granger causality). Hartog et al. (2010) found evidence of long run equilibrium relation between entrepreneurship (business ownership) and economic growth measured by per capita income.

The relationship between necessity entrepreneurship and GDP is likely to be negative for developing countries and positive for developed nations. Koster and Rai (2008) discovered that in India the increase in GDP does not go with the decreasing rate of entrepreneurial activity as expected in the Global Entrepreneurship Monitor (GEM) model. Their result shows a weak positive relationship between economic growth and entrepreneurship in least developed regions. Stel, Carree and Thurik (2004) in GEM countries found that there is a significant linear effect between total entrepreneurial activities (TEA) and GDP growth. They also discovered a significant non-linear effect which shows a negative effect in relatively poor countries and positive effect in relatively rich countries. Salgado-Banda (2005) in 22 OECD countries found both positive and negative relationship using two different measures of entrepreneurship. GEM research work represents one most important analysis and source of data for global entrepreneurial activity and particularly provides a link between entrepreneurship and economic growth (UNCTAD, 2004). GEM believed that the traditional view on GDP and economic competitiveness neglected the role of entrepreneurship (new and small business) in the economy.

The developing countries are assumed to have a high number of necessity entrepreneurship because of the unbearable condition and the need to survive (Koster and Rai, 2008). Opportunity entrepreneurship tends to pick up as the economy improves when people consider it safe to abandon self employment for wage employment. The prevalence of opportunity and necessity can be depicted in a U shaped curve which is termed as U shaped curve hypothesis (Bosma et al., 2008; Koster & Rai, 2008; Wennerkers et al., 2005). In the early stage of development there will be a higher rate of business creation, but as the country's GDP per capita increases there will be a decrease in the rate of business creation. ON the other hand, in the later

stage the relationship tends to be positive, which means increase in GDP per capita causes increase in the rate of new business creation.

Data and method

This section deals with the methodology. It explains the model specification, defining and measuring variables and method of data analysis as follows;
Econometrics model specification:

$$LENT_t = \beta_o + \beta_1 LPOV_t + \beta_2 LUEM_t + \beta_3 LGDP_t + \mu_t \quad (1)$$

Whereby;
LENT = logarithm of entrepreneurship
LPOV = logarithm of poverty
LUEM = logarithm of unemployment
LGDP = logarithm of GDP
β = Parameter
μ = error term

Defining and measuring variables

Entrepreneurship: New business creation is used as a proxy for entrepreneurship as adopted by the previous studies (Wang, 2006; Sternberg and Wennekers, 2005; and Lafuente and Driga, 2007). It is defined as the number of micro and small business created annually in the country. The data was collected from Corporate Affairs Commission (CAC), Nigeria.

Poverty: The National Bureau of Statistics adopted World Bank international poverty threshold of $1.25 per day for Sub-Saharan Africa for measuring poverty in absolute term. Therefore any person with income below this official threshold is considered to be poor. In this case the number of poor people was used as a measure of poverty. The limitation of this measure is that in Nigeria consumer survey on poverty is not conducted on a yearly basis. Data for other years was obtained based on annual poverty projection. The data was obtained from National Bureau of Statistics for 31 years.

Unemployment: Unemployment is defined as a situation where someone of working age would like to be in full time employment, but is unable to get a job. In this paper the number of registered unemployment was used. The data for the registered unemployed was obtained from Federal Ministry of Labour and Productivity, Nigeria. The limitation of this data is that many unemployed people may not be included in the study because they did not register as unemployed in the Ministry.

Gross domestic product: It is basically the amount of goods and services produced in a country over a specific period of time. In this paper absolute

value of real GDP was used as a measure for the period between 1980 and 2010. The data for real GDP was collected from Central Bank of Nigeria (CBN).

Data analysis

Vector autoregressive (VAR) framework is used to provide a systematic way of capturing rich dynamic in multiple time series. It is useful in data description, forecasting, structural inference and policy analysis (Stock and Watson, 2001; and Gujarati and Porter, 2009). The tests conducted were unit root (augmented Dickey-Fuller and Phillips-Perron), Johansen and Juselius (1990) co-integration, error correction model (ECM) and Granger causality, variance decompositions and impulse response function. The Vector error correction model (VECM) is represented by the following equations in which each variable become endogenous;

$$\begin{aligned} ENT_t &= \alpha_0 + \delta_0\, ENT_{t-1} + \delta_1\, GDP_{t-1} + \delta_2\, POV_{t-1} + \delta_3\, UEM_{t-1} + \lambda_0\, ECT_{t-1} + e_t \\ GDP_t &= \alpha_0 + \delta_0\, GDP_{t-1} + \delta_1\, ENT_{t-1} + \delta_2\, POV_{t-1} + \delta_3\, UEM_{t-1} + \lambda_0\, ECT_{t-1} + e_t \\ POV_t &= \alpha_0 + \delta_0\, POV_{t-1} + \delta_1\, ENT_{t-1} + \delta_2\, GDP_{t-1} + \delta_3\, UEM_{t-1} + \lambda_0\, ECT_{t-1} + e_t \\ UEM_t &= \alpha_0 + \delta_0\, UEM_{t-1} + \delta_1\, ENT_{t-1} + \delta_2\, GDP_{t-1} + \delta_3\, POV_{t-1} + \lambda_0\, ECT_{t-1} + e_t \end{aligned} \quad (2)$$

Where ECT is the error correction term measuring the speed of adjustment to the long run equilibrium, and α, δ, λ are estimated parameters

Results and discussion

Unit root test results

In Table 1 and 2 the results of Augmented Dickey fuller (ADF) and Phillips Perron (PP) unit root tests are shown respectively. The results indicate that the null hypotheses of presence of a unit root or non-stationarity in both methods cannot be rejected at level form, but it can be rejected after first differencing at 1% level of significance.

Table1. Unit root test - Augmented Dickey-Fuller (ADF)

Variable	Level		First Difference	
	Intercept	Intercept with trend	Intercept	Intercept with trend
LENT	-2.1361(0)	-2.9055(0)	-5.5600(0)***	-5.4656(0)***
LPOV	-1.2808(1)	-2.2534(1)	-5.7494(0)***	-5.7140(0)***
LUEM	-0.3635(0)	-2.6438(0)	-5.7646(0)***	-5.6316(0)***
LEG	1.1616(0)	-1.3405(1)	-8.5310(0)***	-8.5952(0)***

Note:*** denote statistical significance at 1% level. The critical value of ADF can be found in Mackinnon (1996). The optimum lag length in the test was selected automatically based on Schwarz Information criterion. Lag selection figures are shown in ( ) . In ADF, null hypothesis indicating presence of unit root was examined against alternative for stationarity. LENT is a natural log of ENT, LPOV is a natural log of POV, LUEM is a natural log of UEM, LGDP is a natural log of GDP.

Table 2. Unit root test - Phillips-Perron (PP)

Variable	Level		First Difference	
	Intercept	Intercept with trend	Intercept	Intercept with trend
LENT	-1.8383(5)	-2.8715(3)	-7.8855(16)***	-9.3802(18)***
LPOV	-1.4925(2)	-2.5001(2)	-5.7400(2)***	-5.7095(1)***
LUEM	-0.2637(6)	-2.6758(1)	-5.9593(7)***	-5.7995(7)***
LEG	0.8177(2)	-2.6758(3)	-8.3547(1)***	-8.3250(2)***

Note:*** denote statistical significance 1% level. The critical value of PP can be found in Mackinnon (1996). The optimum lag length in the test was selected automatically based on Newey-West estimator using lag selected by Bartlett kernel information criterion. Lag selection figures are shown in ( ). In PP null hypothesis indicating presence of unit root was examined against alternative for stationarity. LENT is a natural log of ENT,LPOV is a natural log of POV, LUEM is a natural log of UEM, LGDP is a natural log of GDP.

The results from the two testing procedures clearly show that the variables are I(1) integrated order of 1. It is stated that most of the macroeconomic variables are I(1) process (Gujarati and Porter, 2009; Bahmani-Osokoee,1995). Based on these results and having the same order of integration, it is found suitable to proceed to co-integration test to examine the long run relationship among variables.

Co-integration and hypothesis testing results

The result of Johansen cointegration test is presented in the Table 4 and the selection of lag length performed using Schwarz information criterion (SIC) can be seen in Table 3.

Table 3. Lag selection based on multivariate SIC

Lag	SIC
0	3.290467
1	-2.627118*
2	-1.652972

Note: SC refers to Schwarz Information Criterion. Asterisk * denotes the optimum lag selected for VAR estimation in Eviews

From Table 4 panel a the co-integration result reveals that the null hypotheses that states no co-integrating vector (r=0) is rejected in both max eigen value and trace tests, therefore alternative hypothesis is accepted indicating 1 co-integrating vector. This means that the variables in the system share a common trend and move toward one direction in the long run. The result in Table 4 panel B shows normalized co-integrating vector. The coefficients indicate the long run elasticity of the variables. It can be seen that poverty (LPOV) has negative effect on entrepreneurship (LENT). This means that keeping other variables constant, any increase in poverty will decrease the rate entrepreneurship by .13% points.

Table 4. Co-integration and hypothesis testing result

Ho	HA	Max eigen value	95% CV	Trace	95% CV
Panel A: Johansen multivariate test					
r = 0	r = 1	28.9815**	27.5843	48.9196**	47.8561
r ≤ 1	r = 2	15.0945	21.1316	19.9381	29.7970
r ≤ 2	r = 3	4.7803	14.2646	4.8435	15.4947
r ≤ 3	r = 4	0.0631	3.8414	0.0631	3.8414
Panel B: Normalizing the co-integrating vector					
Variables		LENT	LPOV	LUEM	LGDP
		-1.000	0.1346	0.9603	-0.2093

Notes: r indicates number of co-integrating relationships. Asterisks (**) indicate 5% level of significance.

The negative effect of poverty on entrepreneurship supports the findings of Rosa, et al. (2006) in Uganda and Sri Lanka, Mulira et al. (2011) in Uganda, Block and Sandner (2009) and Wagner (2005) in Germany and Verheul et al. (2010) in 27 European countries and the US. This result reveals the existence of opportunity entrepreneurship as poverty cannot stimulate most of the poor to engage in entrepreneurial activities. The finding also reflects pull/prosperity effect which points that people decide to enter into entrepreneurship because of the existing opportunity rather than poverty.

Since about 70% of Nigerian population are poor, they probably lack resources to enable them to meet their basic needs and engage in entrepreneurial activity. Various government regimes in the past have attempted to promote entrepreneurship in order to address the problem of poverty through enactment policies and programs such as National Poverty Eradication Program (NAPEP), Poverty Alleviation Program (PAP), Family Economic Advancement Program (FEAP) and Family Support Program (FSP). The negative relationship between entrepreneurship and poverty is a clear indication that these policies and programs did not make significant impact on entrepreneurship to reduce poverty. Moreover, one of the important means through which the millennium development goal of halving poverty can be attained is to empower the poor people to massively engage in entrepreneurship, otherwise the MGDs target for 2015 will remain elusive.

It also appears that unemployment (LUEM) influences entrepreneurship positively. The result shows that any increase in unemployment will increase the rate of entrepreneurship by .96% points holding other variables constant (see table 4). This indicates that as unemployment is increasing, the rate of entrepreneurship is also increasing. This result corroborates the findings of Yamawaki (1990) in Japan, Audretsch et al. (2001) in 23 OECD countries, Highfield and Smiley (1987) and Evan and Leighton (1989) in US, Ritsila and Tervo (2002) in Finland, and Reynolds et al. (1994) in France, Germany, Ireland, Italy, Sweden, UK and US. The result also indicates that people in the country become entrepreneurs because of threat of unemployment. This reflects the existence of refugee effect/push hypothesis in which unemployed persons are motivated to start up their own business because there is no prospect of getting paid jobs due to macroeconomic instability or depressed market condition (Storey, 1991).

The rate of unemployment is high (23.9% in 2011) in Nigeria, therefore the unemployed can have only two options either to start up their business or keep searching for employment opportunities elsewhere. However, the decision in this regard is dependent on the relative payoff in the environment. People in the country can exercise their latent potentials to form new business as the unemployment rate is increasing (Hamilton, 1989). The dimension of entry into entrepreneurship varies between unemployed and employed people. Evan and Leighton (1990) in the US found that entry into entrepreneurship is high among unemployed than those who are already employed. Although unemployed are motivated to start business because of lack of paid job, they have different mission on how they want to promote their business. The rate of business start up by the unemployed could be accelerated based on the conditions and other environmental factors in the country. The extent to

which unemployment influences the rate of entrepreneurship is very crucial in the realm of public policy (Audretsch and Jin, 1994).

The government of Nigeria also came up with various policies and programs to support unemployed persons to become entrepreneurs. These include the formation of National Directorate for Employment (NDE) in 1986 which is saddled with the responsibility of training and supporting the unemployed to become self reliant by starting their own business. The recent introduction of entrepreneurship courses in all tertiary institutions across the country which is aimed at providing necessary training and business skills to the students is another complementary effort to address the problem of youth unemployment. This is particularly designed to relieve the graduates from the problem of unavailable vacancies in the labor market.

The result further reveals that GDP (LGDP) affects entrepreneurship negatively. It indicates that any increase in economic growth will reduce entrepreneurship entry by about .21% points. This result reflects the left hand side of U curve shaped hypothesis for developing countries and is supported by the findings of Carree, Stel,Thurik and Wennekers (2002), Stel et al. (2004), Wennekers et al. (2005) Naude, et al. (2012) and Acs (2007) in GEM countries and Koster and Rai (2008) in India. From the previous studies the relationship between entrepreneurship and GDP is more likely to be positive for developed countries and negative for developing countries (Acs, 2007 and Acs, Desai and Hessels, 2008).

In developing countries at the initial stage where people face poor economic conditions such as low income and high unemployment they may not have other option than to engage in entrepreneurial activity as a means of survival. There will be a proliferation of many necessity entrepreneurs at this stage, but with the improvement of country's economic conditions these necessity entrepreneurs will decline their interest in entrepreneurial activity leaving only opportunity entrepreneurs. This negative relationship is an indication that as country's GDP is increasing the rate of necessity entrepreneurship is decreasing. The reason is that the necessity entrepreneurs may not have necessary interest and enthusiasm to cope with the intense competition generated in the market and harsh business environment in Nigeria. They would find that it is easier to look for paid employment rather than continuing with their business or starting a new one again.

Short run Granger causality and VECM results

Sequel to the detection of co-integration relation, the proper VAR framework that studies the dynamic relationship between variables must include error correction term (ECT). Thus, VECM provides a way to examine both short run

and long run causal relationship among variables in the model. The result of Granger causality among the variables is presented in the Table 5.

Table 5. VECM and short run Granger causality result

	X2 –Statistics				ECT	
Dependent Variables	ΔLENT	ΔLPOV	ΔLUEM	ΔLGDP	Coefficient	t-statistic
ΔLENT	-	4.9881(0.026)**	2.0555(0.152)	1.6682(0.197)	-0.1467	-1.5652
ΔLPOV	0.0809(0.776)	-	6.1019(0.014)**	11.768(0.001)***	-0.1836***	-5.2393
ΔLUEM	0.3588(0.549)	2.0593(0.151)	-	0.3350(0.563)	-0.1082	-0.7852
ΔLGDP	0.0203(0.887)	0.9732(0.324)	1.4282(0.232)	-	-0.0388**	-2.4226

Note: The VAR was based on 1year lag structure and a constant. ***, **, * indicates statistical significance at 1%, 5%, 10% level respectively. Figures in parenthesis ( ) are p- value.

The result shows that LPOV and LGDP equation have ECT that is statistically significant which indicates that these variables are responsible for the short run adjustment to bring back the system to long run equilibrium. Without any innovation due to LPOV in the short run, the speed of adjustment will be 18% per year which indicates that system needs about 6 years to revert to the long run equilibrium. The results from Granger causality test in Table 5 show direct and indirect short run causality among the variables. Poverty directly Granger caused entrepreneurship. Unemployment and GDP indirectly caused entrepreneurship through poverty. Both the direct and indirect causality found reflect the existence of refugee/shop keeper's effect. This finding can contribute to the argument on whether entrepreneurship is relevant and necessary under the present economic condition in which unemployment and poverty is high and GDP is steadily increasing in the country.

The level of unemployment in a country causes people to live without income and accounts for a situation when they cannot afford basic needs and wants. Hence they become poor and necessitated to pursue entrepreneurial activity. High level of unemployment beyond certain critical level does not necessarily induce people to become entrepreneurs in a country (Hamilton, 1989). The indirect causality from GDP to entrepreneurship through poverty indicates that low GDP due low economic activity and consumer demand causes poverty which consequently pushes poor people to engage in entrepreneurial activity. This situation creates necessity entrepreneurs who will make little impact to the economy. They may exit from entrepreneurship as soon as the situation improves because they were not motivated by opportunity in market.

The diagnostic test results are presented in table 6 which indicate that the model is robust and satisfactorily proven. The estimated residuals have followed normal distribution pattern, the residual are serially

uncorrelated, there is no problem of misspecification and there is evidence of homoscedesticity of variance. Moreover, the recursive parameter estimate of CUSUM and CUSUM of square tests are presented in Figures 1 and 2 respectively (see Appendix 1). The tests indicate that the model is relatively stable as the cumulative values fall within the two standard deviations boundaries at 5% level of significance.

Table 6. Diagnostic test

AR	ARCH	RESET	JB	White
1.050	0.349	0.998	0.858	0.905
(0.365)	(0.907)	(0.327)	(0. 651)	(0.538)

Note: AR and ARCH are the Lagrange multiplier tests for serial autocorrelation and ARCH effect respectively. RESET refers to Ramsey Reset specification test. JB is the Jarque Bera statistics for residual normality test and White refers to White general heteroscedesticity test. Figures in parenthesis are p- value.

Variance decompositions (VDCs)

The variance decompositions gauged the strength of the causal relationship among all the variables in the system. This dynamic analysis beyond the sample strengthened the empirical evidence from the earlier Granger causality analyses. Table 7 shows the decompositions of the forecast error variances of each variable in the system up to 50 years. The analysis can be summarized in the following manner; first, the result indicates that LUEM is the most exogenous variable in the system with only 9% of its forecast error variance being explained by the other variables. Secondly, LPOV is the most interactive variable in the system, about 93% of its forecast error variance is explained by LENT (72%), LUEM (12%) and LGDP (8%). Therefore poverty is most endogenous variable and this strengthens the evidence of causality running from unemployment and economic growth to poverty. Thirdly, the changes in LENT happen largely as a result of movement in LUEM. The effect of LUEM on LENT is increasing as the time horizon (years) is also increasing.

Generalized impulse response functions (GIRFs)

The system as earlier mentioned has four dimensional variables. Therefore 12 possible scenarios of GIFRs are presented for all the variables after disregarding each variable's own shock. The Figure 3 (Appendix 2) shows the visual illustrations of the GIRFs up to 50 years. In most of the result the variables exhibit rapid responses to the shocks, they move fast until after 5 years when they become stable. Moreover, LENT respond negatively due to shock in LPOV that indicate the existence of negative relationship between

them. LPOV respond positively due to shock in LUEM and respond negatively due to shock in LGDP

Table 7. Generalized variance decompositions (VDCs)

			Percentage of forecast variance explained due to innovation:				
Horizon			**ΔLENT**	**ΔLPOV**	**ΔLUEM**	**ΔLGDP**	**ΔCV**
Years	1	Relative variance in ΔLENT	**100.000**	0.000	0.000	0.000	0.000
	2		**84.301**	0.143	15.098	0.457	15.699
	10		**68.011**	0.965	30.779	0.245	31.989
	30		**65.841**	0.971	33.016	0.172	34.159
	50		**65.392**	0.972	33.478	0.157	34.608
	1	Relative variance in ΔLPOV	0.358	**99.642**	0.000	0.000	0.358
	2		11.937	**83.354**	1.303	3.406	16.646
	10		63.211	**18.002**	12.267	6.521	81.998
	30		71.139	**8.567**	12.410	7.884	91.433
	50		72.600	**6.828**	12.436	8.136	93.172
	1	Relative variance in ΔLUEM	2.247	2.400	**95.353**	0.000	4.647
	2		3.012	1.407	**95.481**	0.100	4.519
	10		1.178	5.803	**92.231**	0.788	7.769
	30		0.795	7.248	**90.808**	1.149	9.192
	50		0.713	7.561	**90.499**	1.228	9.501
	1	Relative variance in ΔLGDP	6.586	0.062	3.996	**89.356**	10.644
	2		14.499	0.318	3.155	**82.028**	17.972
	10		28.836	4.423	0.348	**66.394**	33.606
	30		30.196	4.896	0.137	**64.770**	35.230
	50		30.426	4.976	0.102	**64.496**	35.504

Note: Figures in first column is horizons in years. The column in bold represents the impact of each variable's own shock. The last column provides the percentages of forecast error variances of each variable explained by the other variables. All figures in table are rounded to 3 decimal places.

Conclusion

The interest in this study came as a result of the observed dwindling socio-economic conditions in Nigeria and a question whether entrepreneurship could be relevant and necessary in addressing myriad socio-economic problems. Therefore the paper examines the influence of poverty, unemployment and GDP on entrepreneurship. The existence of a long run relationship among

entrepreneurship, poverty, unemployment and GDP has been found and the Granger causality result shows that poverty directly causes entrepreneurship, while unemployment and GDP indirectly cause entrepreneurship entry. The causality from unemployment to entrepreneurship entry strengthens the evidence of refugee/shop keepers' effect which means unemployment causes people to engage in entrepreneurship in Nigeria. It is discovered that poverty and GDP influence entrepreneurship negatively which indicates that the existing entrepreneurs are likely to be an opportunity entrepreneurs and supports Schumpeterian/prosperity effect hypothesis. The negative influence of poverty on entrepreneurship is not anticipated as poverty is expected to increase entrepreneurship in the country, but it is found that poverty cannot stimulate entrepreneurship.

The positive influence of unemployment on entrepreneurship is an indication of the presence of necessity entrepreneurs and it supports push/ refugee effect hypothesis. Therefore, the paper reveals the presence of both necessity and opportunity entrepreneurship in the country. Necessity entrepreneurship could create job and income in the short run, thereby reducing the social problem. Unemployed and poor people often have feelings of dissatisfaction about their entrepreneurial involvement which may result in their exit from entrepreneurship as soon as they get an alternative paid job. Opportunity entrepreneurs are innovative individuals who create disequilibrium in the economy. The prevalence of this type of entrepreneurs in a country may result in more innovations, high competition and economic growth in both short and long run. Schumpeterian entrepreneurs are opportunity driven, productive and high impact individuals who are carrying out new combinations (innovation) and contribute towards economic development. The paper contributes significantly in providing useful information to various stakeholders for effective policy formulation towards entrepreneurship development.

The paper also contributes to the theory and literature of entrepreneurship in the Nigeria context. The Schumpeter's theory of economic development is based on the assumption that entrepreneurs are innovative and can stimulate GDP. Entrepreneurship may not necessarily drive and stimulate the desired GDP if it is driven by necessity. It is also expected theoretically that increase in poverty will automatically increase the rate of entrepreneurship entry. The unexpected negative relationship between entrepreneurship and poverty shows that poverty may not necessarily cause people to engage in entrepreneurship because of probable lack of start-up capital.

Practical implications and direction for further research

There is a need for the government to revisit the existing policy on micro, small and medium enterprises (MSMEs) to adequately address the problem of the poor and unemployed in order to avail them with the opportunity to engage in entrepreneurship. There will be an increase in the rate of crime and other social vices where majority of poor and unemployed people are left without employment or incentives to partake in entrepreneurial activities. Lack of necessary infrastructure could affect the performance of business, income and subsequently lead to a closure of the enterprises. Therefore the government should place high priority in boosting electricity generation and supply so as to reduce the cost of operation and make the business environment more competitive, conducive and friendly for entrepreneurial activity.

The paper focuses on some selected macroeconomic variables in examining their influence on entrepreneurship in Nigeria. Measuring entrepreneurship at the aggregate level is a difficult and complex task. Using new business creation as a proxy may not always be appropriate because sometimes it is not easy to distinguish between legal and illegal business activity. The total number of micro and small businesses registered (as business name) annually was used without filtering or removing the number of those businesses that ceased to exist. There is no official record of those registered businesses that stopped operating as micro or small businesses over the years. Many businesses were not included in the study because they did not register with the government agency as such their number will not be reflected in the list of new business created in the country.

This study is limited in scope but provides sufficient evidence on the factors that influence entrepreneurship in Nigeria. In future, similar study should mitigate the effect of frequent entry and exit from entrepreneurship in the data and effort should be made to filter and consider those with genuine business interest in order to correctly predict the effect of entrepreneurship on the economy. The rate of new business creation varies according to sectors and industries from year to year, therefore there is need to look at individual sector on how entrepreneurship is affected rather than taking analysis on the whole sectors of the economy.

References

Acs, Z. J. (2007). *How entrepreneurship is good for economic growth?* a paper presented at the 25th economic conference of progress foundation co-sponsored by American Institute for Economic Research (AIER) in Great Barrington, Massachusetts.

Acs, Z.J., Desai, S., Hessels, J. (2008). Entrepreneurship, economic development and institutions. *Small Business Economics, 31*, 219-234.

Akoum, I.F. (2008). Globalization, growth, and poverty: The missing link. *International Journal of Social Economics, 35*(4), 226-238.

Audrestch, D.B., Thurik, A.R. (2000). Capitalism and democracy in the 21st century: From the managed to the entrepreneurial economy. *Journal of Evolutionary Economics, 10*, 17–34.

Audretsch, D.B., Carree, M.A., Thurik, A.R. (2001). *Does entrepreneurship reduce unemployment?* Tinbergen Institute Discussion Paper TI 2001-074/3, Rotterdam.

Audretsch, D.B., Fritsch, M. (1994). The geography of firm births in Germany, *Regional Studies, 28*(4), 359-365.

Audretsch, D.B., Keilbach, M. (2004). *Entrepreneurship capital: Determinants and impact on regional economic performance*, MPI Discussion Paper No. 3704. Jena: Max Planck Institute of Economics.

Audretsch, D.B., Jin, J. (1994). a reconciliation of the unemployment: New firms start up paradox. *Small Business Economics, 6*,381-385.

Bahmain-Oskooee, M. (1995). The long run determinants of the US trade balance revisited. *Journal of Post Keynesian Economics, 17*(3), 457- 465.

Block, J., Sandner P. (2009). Necessity and opportunity entrepreneurs and their duration in self-employment: Evidence from German micro data. *Journal of Industry, Competition and Trade*, 9,117-137.

Bosma, N., Acs, Z.J., Autio, E., Coduras, A., Levie, J. (2008). *Executive report*. Global Entrepreneurship Monitor (GEM).

Carree, M. (2002). Does unemployment affect the number of establishments? a regional analysis for U.S. states, *Regional Studies, 36*(4), 389-398.

Carree, M.A., van Stel, A.J., Thurik, A.R., Wennekers, A.R.M.(2002). Economic development and business ownership: An analysis using data of 23OECD countries in the period 1976–1996. *Small Business Economics, 1*,271–290.

Evans, D.S., Leighton, L.S. (1989). Some empirical aspects of entrepreneurship. *American Economic Review*, 79, 519–535.

Evans, D.S., Leighton, L.S. (1990). Small business formation by unemployed and employed workers. *Small Business Economics, 2*(4), 319-330.

Faria, J.R., Cuestas, J.C., Mourelle, E. (2010). Entrepreneurship and unemployment: a non-linear bidirectional causality. *Economic Modelling, 27*(5),1282-1291.

Garofi, G. (1994). New firm formation and regional development: The Italian case. *Regional Studies, 28*(4), 381-394.

Gujarati, D.N., Porter, D.C. (2009). *Basic econometrics*. Singapore: McGraw- Hill Companies Inc.

Hamilton, R.T. (1989). Unemployment and business formation rates: Reconciling time Series and Cross Section Evidence. *Environment and Planning, 21*, 249-255.

Hartog, C. Parker, S., Stel, A., Thurik, R. (2010). The two way relationship between entrepreneurship and economic performance. EIM research report H200822, July 2010.

Highfield, R., Smiley, R. (1987). New business starts and economic activity: An empirical investigation. *International Journal of Industrial Organization*, 5, 51-66.

Johansen and Jesulius (1990). Maximum likelihood estimation and inference on cointegration with application to the demand for money. *Oxford Bulletin of Economics and Statistics, 52*, 169-244.

Jones-Evans, D., Brookbark, D., Aaron, E. (2006). Public support programmes for high growth business in the UK. An exploratory Study. National Entrepreneurship Observatory, GEM Wales paper series No 7.

Keister , L.A. (2005). *Entrepreneurship (Ed.)*. Netherland: Elsevier Ltd,

Knight, F.H. (1971). *Risk, uncertainty, and profit*. Chicago: The University of Chicago Press, originally published in 1921 by Houghton Mifflin Company.

Koster, S., Kumar Rai, S. (2008). Entrepreneurship and economic development in a developing country: a case study of India. *Journal of Entrepreneurship, 17*(2), 117-137.

Lafuente, E.M. and Driga, O. (2007). Report on entrepreneurial activities in Romania. CEBR working paper series 01-2007.

Meager, N. (1992). Does unemployment lead to self-employment? *Small Business Economics, 4*, 87-103.

Mojica-Howell, M.N., Whittaker W.L., Gebremedhin, T.G., Schaeffer, P.V. (2012). Examining the bidirectional relationship between entrepreneurship and economic growth: Is entrepreneurship endogenous?, Entrepreneurship - born, made and educated, Prof. Thierry Burger-Helmchen (Ed.), ISBN: 978-953-51-0210-6, InTech, Available from: http://www.intechopen.com/books.

Mulira, F., Namatovu, R., Dawa, S. (2011). Panacea or Precipitate. "The Entrepreneurship and Poverty Paradox". Retrieved from www.aibuma.org/proceedings.

Naude, W., Amoros, J.E., Cristi, O. (2012). Surfeiting, the appetite may sicken: entrepreneurship and the happiness of nations. UNU MERIT working paper 2012-013.

NBS (2010). The review of the Nigerian economy. National Bureau of Statistics.

Plehn-Dujowich, J.M. (2012). The dynamic relationship between entrepreneurship, unemployment and growth: Evidence from US Industries, SBA research report No 394.

Reynolds, P., Storey, D.J., Westhead, P. (1994). Cross national comparisons of the variation in new firm formation rate. *Regional Studies, 28*(4), 443- 456.

Ritchie, B., Lam, W. (2006). Taking the stock of small business and entrepreneurship research. *International Journal Entrepreneurial Behavior and Research, 12*(6),312-327.

Ritsila, J., Tervo, H. (2002). Effects of unemployment on new firm formation: Micro level panel data evidence from Finland. *Small Business Economics Journal, 19*, 31-40.

Rosa, P.J., Kodithuwakku, S., Balunywa, W. (2006). Entrepreneurial motivation in developing countries: What does "Necessity and opportunity really mean". *Frontier of Entrepreneurship Research, 26*(20), Chapter XX Micro Entrepreneurship.

Salgado-Banda, H. (2005). Entrepreneurship and economic growth: An empirical analysis. Seminar paper at University of London.

Sexton, D.L. and Kasarda, J.D. (1992). *The state of the art of entrepreneurship*. PWS – Publishing Company, Boston, USA

Stel, A., Carree, M., Thurik, R. (2004). The effect of entrepreneurship on national economic growth: An analysis using the GEM database. SCALES paper N200320.

Stel, A., Thurik, R., Verheul, I., Baljeu, L. (2007). The relationship between entrepreneurship and unemployment in Japan. Tinbergen institute discussion paper, TI 2007-080/3.

Sternberg, R. and Wennekers, S. (2005). Determinants and effects of new business creation using global entrepreneurship monitor data. *Small Business Economics, 24*,193-203.

Stock, J.H. and Watson M.W. (2001). Vector autoregressions. *Journal of Economic perspective, 15*(4),101-115.

Storey, D.J. (1991). The birth of new firms – does unemployment matter? a review of evidence. *Small Business Economic, 3*,167-178.

Storey, D.J. (2003). *Entrepreneurship: small and medium sized and public policies.* Handbook of entrepreneurship research. Kluwer Academic Publishers, Amsterdam, pp 473-511.

Szirmai, A., 2005. *Dynamics of socio-economic development:* An introduction. Cambridge University Press: Cambridge, ISBN: 9780521817639, pp 233.

Thurik, R., Carree. M.A., Stel, A., Audretsch, D.B. (2008). Does self-employment reduce unemployment. *Journal of Business Venturing, 23*(6),673- 686.

UNIDO (2003). *Path out of poverty: Developing rural and women entrepreneurship.* United nation industrial development organization, 2003 Vienna.

UNCTAD (2004). Entrepreneurship and economic development: The Empretec show Case. United Nation Conference on Trade and Development Publication January 2004.

Verheul, I., Thurik, R. Hessel, J., van der Zwan, P. (2010). Factors influencing the entrepreneurial engagement of opportunity and necessity entrepreneurs. EIM. Retrieved from http://www.entrepreneurship-sme.eu.

Wagner, J. (2005). "Der noth gelorchand, Nicht dem eignen tried"- Necessity and opportunity entrepreneurs in Germany: Evidence from the regional entrepreneurial Monitor. IZA Discussion Paper No 1608.

Wang, S. (2006). Determinant of new firm formation in Taiwan. *Small Business Economic, 27*,313-321.

Wennekers, S., Van stel, A, Thurik, R., Reynolds, P. (2005). Nascent entrepreneurship and the level of economic development. *Small Business Economics, 24*,293-309.

Yamawaki, H. (1990). The effects of business conditions on net entry: Evidence from Japan. In P.A. Geroski and J. Schwalbach (Eds.), *Entry and Market Contestability: An International Comparison*.Oxford: Basil Blackwell.

Appendix 1

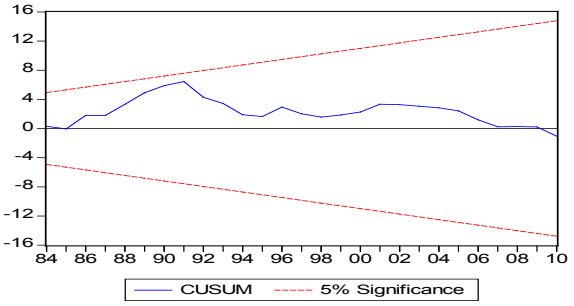

Figure 1. CUSUM Test

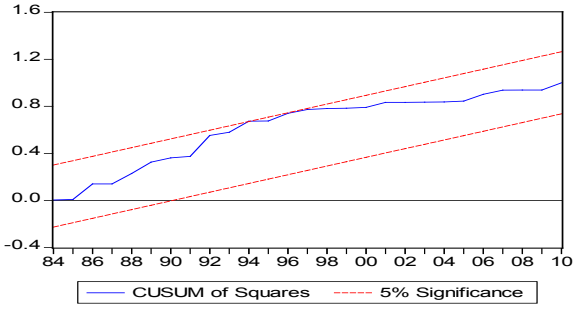

Figure 2. CUSUM OF SQUARE Test

Appendix 2

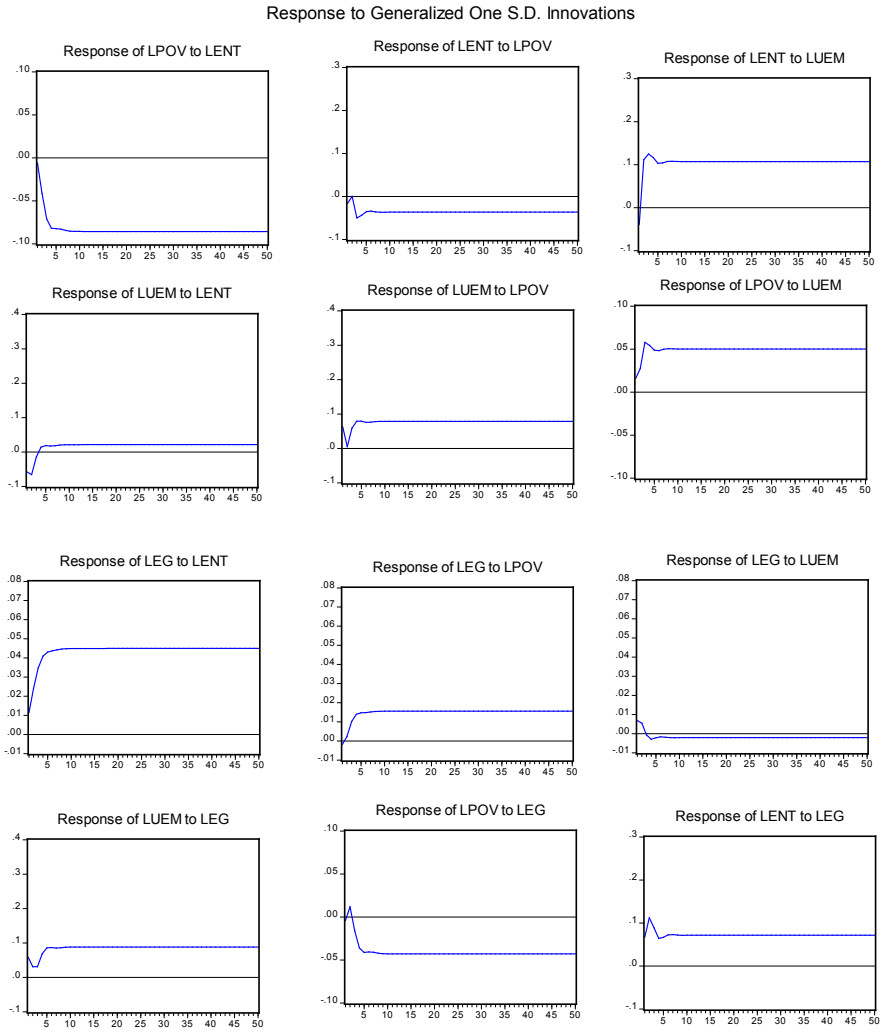

Figure 3 Generalized impulse response functions (IRFs)

Abstrakt (in Polish)

Celem artykułu jest zbadanie wpływu ubóstwa, bezrobocia i PKB na przedsiębiorczość. Dla potrzeb tej analizy zgromadzono dane za okres trzydziestu jeden lat wykorzystując rozmaite oficjalne źródła. Zastosowano model wektorowej autoregresji (VAR), aby systematycznie ująć bogatą dynamikę wielokrotnych serii czasowych. Inne przeprowadzone testy obejmowały jednostkowy test pierwiastka, test ko-integracji Johansena i Juseliusa (1990), Model przyczynowości Grangera i analizę dynamicznego modelu wykraczającą poza próbkę. Okazało się, że ubóstwo i PKB negatywnie wpływają na przedsiębiorczość, natomiast bezrobocie ma na nią wpływ pozytywny. Artykuł ujawnia zarówno obecność przedsiębiorców wykorzystujących możliwości, jak i tych z konieczności w badanym państwie. Istnieje potrzeba, aby rząd dokonał rewizji swojej polityki dotyczącej mikro-, małych i średnich przedsiębiorstw aby odpowiednio zareagować na problem ludzi biednych i bezrobotnych, dając im możliwość zaangażowania się w przedsiębiorczość. Przyszłe badania powinny zająć się zminimalizowaniem efektu częstego rozpoczynania i kończenia działalności przedsiębiorczej, tak by prawidłowo przewidzieć wpływ przedsiębiorczości na gospodarkę.

Słowa kluczowe: *rozwój przedsiębiorczości, ubóstwo, bezrobocie, PKB.*

How Korean Venture Capitals Invest In New Technology Ventures*

*Youngkeun Choi***

Abstract

In the entrepreneurship field, this study examines what kinds of external endorsements are helpful for venture capitals investment and the growth of new technology ventures in developing countries. This study uses the signalling theory and the methodologies of multiple regression and survival analysis with the panel data of the ventures in Korea. In the results, collaboration with business groups and certification of government are positively influential in attracting venture capitals' investment, which accelerate the growth of new technology ventures. The practical implication for entrepreneurs is that they need to obtain the endorsement from business groups and governments strategically.

Keywords: *new technology venture creation, small business, signalling theory, business group, venture capital, Initial Public Offering.*

Introduction

Developing countries need to strengthen their research capabilities in order to catch up with advanced countries. For this, a country's activities to develop, adapt and harness its innovative capacity are critical for its economic performance in the long run (Ernst, 2005; Ernst and Naughton, 2008). As new technology-based ventures (NTVs) introduce disruptive technologies and perform the role of Schumpeterian entrepreneurship, or "creative destruction," in the economy, they are an especially important source of new jobs and provide a crucial stimulus to national economies (Audretsch, 1995; Timmons and Bygrave, 1986). So the factors that drive their performances have increasingly attracted the attention of entrepreneurship scholars as well as policy makers in developing countries.

NTVs need a greater amount and variety of resources for research and development (R&D) and marketing to differentiate and commercialize new technologies compared to traditional businesses. So, it is very important for NTVs to obtain the requisite resources from external resource holders. However, NTVs involve not only uncertainty that general ventures possess

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but also additional uncertainty, for new technology is by its very nature highly uncertain (Tushman and Rosenkopf, 1992). For these reasons, NTVs are extremely risky. Such uncertainty makes resource holders hesitant to provide resources to NTVs, so they have difficulty in obtaining the requisite resources in the markets (Colombo and Grilli, 2007; Peneder, 2008).

A lot of researches have argued that venture capitals are typical resource providers for NTVs and examined what their viewpoints of investment decision-making (Gompers and Lerner, 1997; 2001) are. In developed countries, relatively efficient markets for capital and labour, easy access to complementary business services, and consistent enforcement of property right, as well as relatively corruption-free government and independent judiciary, all permit VCs to provide their resources by the rules of the game. In developing countries, by contrast, many of these institutions exist in a relatively weak form. Therefore, under these different situations, the investment pattern of VCs in developing countries may differ from one of VCs in developed countries such as USA. However, little research has paid its attention to this agenda of how VCs in developing countries invest in NTVs. Based on this gap in the academic literature, the following research question is posed:

RQ: *What factors are attracting VCs whose investments accelerate the growth of NTVs?*

Hypothesis

The present study employs insight from signalling theory (Podolny, 1993; 2008; Spence and Michael, 1974; Spence, 1973). To deepen the research question, this study examines two sub research questions. First, what are the identities of endorsing organization signalling to VCs' investment in developing countries? Second, do VCs play a pivotal role for the growth of NTVs in developing countries? This study then tests these hypotheses using the NTVs in Korea which is a typical example of a developing country. The empirical findings from this study confirm these hypotheses and have important implications for both academicians and practitioners.

External endorsement of NTVs and VC investment in developing country

In developed countries, market-based transactions provide access to most needed elements of resources such as finances, human resources, technology etc. Relatively efficient markets for capital and labor, easy access to complementary business services and consistent enforcement of property rights as well as relatively corruption-free government permit individual entrepreneurs to raise capital, hire human resources, learn about customer demands, and play by the rules of the game. In developing countries, by

contrast, where many of these institutions exist in a relatively weak form, NTVs need to act strategically to gain legitimacy to be endorsed by respectable organizations.

NTVs involve considerable uncertainty. Entrepreneurs try to reduce this uncertainty by gaining legitimacy from well-regarded individuals and organizations. Zimmerman and Zeitz (2002) argued that legitimacy, which connotes a social judgment of acceptance, appropriateness, and desirability, is a resource by itself that enables startups to access other resources needed for survival and growth and helps startups overcome the liability of newness. Although startups can gain legitimacy by conforming passively to the demands and expectations of the existing social structure (DiMaggio and Powell, 1983; Suchman, 1995), they can also do so by acting strategically (Zimmerman and Zeitz, 2002). For instance, startups can choose more favorable environments (Porter, 1980), manipulate their environment by teaming with other successful organizations (Oliver 1991), and create environments with new norms, values, and models (Aldrich and Fiol, 1994). Several studies have found great variance in startups' ability to gain access to resources and stable relationships, which in turn leads to differences in these startups' early performances (Baum, 1996; Fichman and Levinthal, 1991).

Therefore, in developing countries, external endorsement is a critical factor for success in NTVs and can be a positive signal to VCs. Two key respectable organizations, business group (BG) and government, can play a pivotal role to endorse NTVs which would be a positive signal to VCs.

First, strategic alliances with BGs would provide endorsement for NTVs. BGs control a substantial fraction of a country's productive assets and account for the largest and most visible of the country's firms. So they can contribute to innovation through intangible assets such as business reputation and government tie by substituting for functions that stand-alone institutions provide in developed countries (Teece, 1996). BGs are respectable organizations that can provide various resources including human resources, technology, or markets as well as finance. Therefore, in developing countries, NTVs can obtain their requisite resources by collaborating with BGs (Ratajczak-Mrozek, 2012). And, by establishing a strategic alliance with a highly reputable partner, venture companies can receive the benefit of the reputation and induce resources from the possessors. Stuart et al. (1999) and Stuart (2000) argue that the reputation of strategically allied partners provide the endorsement. Stuart et al. (1999) argue that as the uncertainty of ventures increases, the endorsement effect which strategic alliances provide increases. Furthermore, Chang (2004) shows that in the internet industry, the reputation of the alliance partner of the ventures provides the role of endorsement. Especially, Podolny and Stuart (1995) argue that if BGs adopt

some new technology, it can be widely used by achieving social recognition. BGs often control a substantial fraction of a country's productive assets and account for the largest and most visible of the country's firms (Granovetter, 1995; Khanna and Palepu, 1997). In particular, unlike in developed countries, because BGs fill the gap left by market failure, they can provide resources for the innovation of ventures and thus influence the survival and growth of ventures. Therefore, due to high uncertainty of NTVs, VCs have difficulties in evaluating the value of NTVs directly and thus are reluctant to provide their resources. Given this situation, collaborations with BGs play the role of endorsement to make VCs positively evaluate the potential of NTVs. This endorsement induces VCs to provide their resources to NTVs and consequently perform well.

Secondly, a variety of support forms from governments would provide endorsement for NTVs. Governments of developing countries trying to catch up with technological advancement have a legitimate incentive to seriously consider socioeconomic externalities of sponsoring NTVs. Thus they often intervene in the market for corporate creation and development. Studies in financial economics argue that due to capital market imperfections, it is difficult for NTVs to obtain the external financing they need; in turn lack of adequate funds hinders firms' growth and even threatens their survival (Carpenter and Petersen, 2002a and Carpenter and Petersen, 2002b). Under the situation of capital market imperfections, the government provides R&D fund directly to early-staged NTVs, in which VCs are reluctant to invest, to maximize socioeconomic externalities of them (Griliches, 1998; Lach, 2000). For example, Tan and Tay (1994) investigated the factors that influence the growth of small firms and suggested that financial support from the government was major a factor. Therefore, in developing countries, NTVs can obtain their requisite resources through supports of governments. And by obtaining supports from governments, venture companies can receive the benefit of the reputation and induce resources from the possessors. Lerner (1999) suggests the government support plays the role of endorsement. He found that the firms that receive SBIR obtain more investment of VCs than other firms. An even more interesting thing is that the amount of support is not important but the support itself provides the positive signal of endorsement. Unfortunately, there is no other research apart from Lerner (1999)'s study that suggests the role of endorsement of the government's support. In particular, unlike in developed countries, because governments fill the gap left by capital market imperfections, they can provide resources for the innovation of ventures and thus influence the survival and growth of ventures. Therefore, due to high uncertainty of NTVs, VCs have difficulties in evaluating the value of NTVs directly and thus are reluctant to provide

their resources. Given this situation, supports from governments play the role of endorsement to make VCs positively evaluate the potential of NTVs. This endorsement induces VCs to provide their resources to NTVs and consequently perform well.

H 1: *When NTVs are endorsed by respectable organizations, venture capitals in developing countries are more likely to invest in them.*

H 1-1: *When NTVs collaborate with business groups, venture capitals in developing countries are more likely to invest in them.*

H 1-2: *When NTVs obtain supports from governments, venture capitals in developing countries are more likely to invest in them.*

The mediating role of venture capitals' investment of NTVs' growth

As resource providers, VCs are helpful for ventures. Gompers and Lerner (1997; 2001) argue that VCs provide financial resources needed for ventures and their portfolios can grow faster, for they can get additional investment from VCs and they are not in financial trouble. And, Davila et al. (2003) argues that ventures that receive more funding are able to hire, retain, and pay talented employees, who are critical to ventures' growth and help them go to an IPO more quickly. Baum and Silverman (2004) suggest that VCs are not only investors but also allegedly perform an important "coach" function. They provide their portfolios with constant services in fields such as: strategic planning, marketing, finance, accounting and human resource management, where these firms typically lack internal capabilities.

Simultaneously, other resource holders can view VCs' investment as a strong signal of ventures' quality and future prospects (Spence and Michael, 1974; Freeman, 1999; Podolny, 2001; Stuart, et al. 1999). VCs are evaluated on their ability to generate high returns for their investors. Since they take a fraction of the proceeds, they are motivated to generate high performance. Moreover, VCs that have a history of delivering extraordinary returns find it easier to raise funds from investors. Thus, VCs are unlikely to invest in ventures that have poor future prospects. In addition, since VCs often help ventures by performing "coach" function, they increase the chance that ventures become successful. Thus, endorsement by respectable VCs not only signals the quality of a venture but also serves as a vote of confidence in the venture. By doing so, the endorsing organizations' legitimacy carries over to the recipient, providing it credibility, contact, and support for the entrepreneurs, building a venture's image, which in turn, other resource holders will provide their resources actively (Spence, 1974; Freeman, 1999; Podolny, 2001). Megginson and Weiss (1991) maintain that VC-backed ventures go public faster than the non-VC-backed one. Chang (2004) argues that the higher the reputation of

ventures, the more money internet ventures raise from VCs, the faster they have an IPO.

As I review the relevant literatures, the endorsement of respectable organizations would influence the growth of NTVs (Khandwalla ,1976; Utterback and O'Neill, 1994; Kirzner, 1997; McMullen and Shepherd, 2006; Weick, 1996; Stuart, et al. 1999; Stuart, 2000; Chang, 2004; Podolny and Stuart, 1995; Tan and Tay, 1994; Lerner, 1999). This study suggests that they lure investment of VCs in developing countries. And relevant studies maintain that VCs provide their tangible and intangible resources to NTVs and induce passive resource holders to provide their resources, and so in turn NTVs can acquire the necessary resources they need to perform well. Therefore, this study raises the possibility of a mediating role of VCs between the endorsement of respectable organizations and the growth of the NTV.

H 2: *NTVs endorsed by respectable organizations can grow faster when they receive venture capitals investments.*

H 2-1: *NTVs collaborating with business groups can grow faster when they receive venture capitals investments.*

H 2-2: *NTVs obtaining supports from governments can grow faster when they receive venture capitals investments.*

Methods

Sample

I collected the data in the following procedure. First, data is collected from DART (Data Analysis, Retrieval and Transfer System), which is an electronic disclosure system that allows companies to submit disclosures online (www.dart.fss.or.kr). Second, the original target research sample consists of 1,253 KOSDAQ (Korea Securities Dealers Automated Quotation) stock market listed firms from July 1, 1996 to December 31, 2005. Finally, I supplemented the database with diverse approaches such as newspaper articles, publications, corporate homepages and phone calls to the firms.

And, to define our final sample for analysis, I had to consider the following things. First, I limited samples to IT firms founded after 1990, because business ventures in Korea have developed as the IT industry has expanded quickly during 1990s (Chung and Choi, 2008). Second, I also limited samples to the firms which went public after July 1, 2000 to eliminate the unusual bias caused by these dramatic changes in market conditions. The Korean government had consistently loosened the listing requirements for the KOSD AQ market to encourage the provision of listed firms from July 1996 when the KOSDAQ stock market opened. But, by the early 2000s, the KOSDAQ market had collapsed. With rapid market readjustment, IT firms faced a dramatic drop

in stock prices. Internet companies were hit hardest elsewhere. Moreover, market factors were aggravated due to insufficient restructuring, misdeeds of venture managers and unfair trading in the KOSDAQ market. With the overall venture industry experiencing a dramatic shakeout, the government raised the registration standards for the KOSDAQ market (Lee 2002). The KOSDAQ market was under-valued from July 1, 1996 to late 1998 due to the so called "IMF financial crisis" and the bursting of the dot-com stock market bubble from early 1999 to the first half of 2000. Finally, I eliminated firms of which the CEO is not a founder or a major shareholder. This study came up with the final sample of 170 KOSDAQ-listed firms for analysis.

Analysis method

Logistic regression was employed to test Hypotheses 1 and 2. I added the VC's investment as a dependent variable. I conducted logistic regression because the dependent variable is measured not on a quantitative scale, but on a qualitative scale. The binary variable of VC's investment follows binominal distribution, not normal distribution.

And finally, survival analysis was employed to test Hypotheses 3 and 4. I use the time to IPO as a dependent variable. a longitudinal statistical analysis method may be used both in the analysis of qualitative and quantitative data (Tuma and Hannan 1984). The dependent variable of this analysis method is the time to the occurrence of an event or the rate of an event occurring that a researcher is interested in. This study adopts the Cox Regression Model, which is a widely used statistical model to investigate the complex relationship between survival time and other factors.

Measures

Independent variables

Collaboration with a BG

Korean commercial law defines about 900 firms with assets of over 2 trillion Won as a business group. More generally, they regard the 30 largest firms ranked by assets as so called 'Chaebols', announced by the Fair Trade Commission from 1995 to 2005. Collaboration with a BG includes supply agreements, joint R&D, share participation, and joint ventures. I define large companies as the 30 largest firms ranked by assets. This research defines a BG as an enterprise among the 30 largest firms as declared by the Fair Trade Commission. This study uses a binary variable to measure a strategic alliance with a BG that takes on the value of 1 if allied with BGs (strategic alliance with BG = 1) and 0 otherwise (no strategic alliance with BG = 0).

Government Support

In the research context, Korean government provided some support program of venture company certification**.** Under the venture company certification program enacted in 1998, the Small and Medium Business Administration designates qualified venture companies as 'official venture company' based on the stipulated regulations. This certification system is based on the 'Special Law for the Promotion of Venture Businesses.' This is quite a unique institution because there is no similar legislation case in the other countries. Korean government provides certified venture companies with various benefits such as tax benefits, generous stock option issues, extended guarantee by government owned financial institution, preferred supplier status for government purchase, alleviated public stock offering requirements, and so forth. This study uses binary variable to measure the firm obtained venture company certification that takes on the value of 1 if received venture company certification (venture company certification = 1) and 0 otherwise (non-venture company certification = 0).

Mediating variables

Venture capital investment

Previous research suggested that the investment of VC affects the time to IPO. Gompers and Lerner (1997; 2001) argue that venture firms that have obtained VC investment go public faster than firms without VC investment. Venture firms endorsed by VC can secure additional financial resources at the proper time, thus they can grow relatively fast. In addition, venture firms endorsed by VC attain rapid growth, because VC often helps venture firms by providing non-financial resources such as marketing support, managerial advice, human resources supply, and alliance arrangements with potential customers and suppliers, all of which can increase the chance that these start-ups become successful. An endorsement by a respectable VC investor also signals the quality of a venture firm. By doing so, the endorsing organization's legitimacy carries over to the recipient, providing it credibility, contact, and support for the founders, building a start-up's image, and facilitating the start-up's access to resources. Therefore, the reputation of VC helps venture firms go to IPO faster (Gompers 1996; Yoon et al. 2005). This study uses a binary variable to measure VC support that takes on the value of 1 if it received VC (VC investment = 1) and 0 otherwise (no VC investment = 0).

Dependent variables

The growth of NTVs

NTVs exploit business opportunities with differentiated technology in areas of rapid technological change. NTVs are under a higher level of

uncertainty than existing firms, thus, they lack sufficient financial resources for R&D and marketing compared to existing firms. An IPO allows a firm to tap a wide pool of investors to provide it with capital for future growth, repayment of debt, and/or working capital. And once a firm is listed, they are able to enhance their reputation by introducing the firm's value outside of the firm. But, IPO firms sometimes exhibit a decline in post-issue operating performance because there is potential for higher agency conflicts, lower ownership retention, and IPO expenses (Jain and Kini, 1994). Despite these drawbacks, NTVs have no choice but to implement IPOs as a crucial strategy and try to reduce the time required to IPO. Researchers thus adopt the IPO event as a measure for the rate of the NTVs' growth (Chang, 2004; Stuart, et al., 1999). The time to IPO is measured by months since the date of founding. This study takes the logarithm of this variable for the adjustment of scale.

Control variables

Industry sub-type characteristics

Characteristics of industry sub-types affect venture firm's time to IPO (Chang, 2004; MacMillan, et al., 1985; Stuart, et al., 1999). The market stage also influences alliance formation (Eisenhardt and Schoonhoven, 1996). I defined an IT firm as the firm which was assigned an IT index when listed on KOSDAQ. IT KOSDAQ index classifies communications and broadcasting, IT software, and IT hardware. Communications and broadcasting includes communications services and broadcasting services. IT software covers internet, software, computer services, and digital contents whereas IT hardware covers communications equipment, IT equipment, semiconductor, and components.

Stock Market Conditions

Stock market conditions influence the time to IPO (Chang, 2004; Stuart, et al., 1999). Founders and financial investors tend to decide to go public because high subsequent investment returns are expected from the buoyant stock market for IPOs. The IPO process in Korea usually takes 3 months. This study thus measures the stock market condition as the composite stock exchange index of KOSDAQ from 3 months before the IPO date.

Firm Size

This study controls the firm size. Firm size is used to account for the greater resources and choices available to larger firms with a greater ability to invest in technology and innovation as well as potential scale advantages (Scherer and Ross, 1990). This study measures firm size as the log (10) of yearly sales just before the IPO.

Human capital

Human capital theory maintains that knowledge provides individuals with increases in their cognitive abilities, leading to more productive and efficient potential activity (Schultz, 1959; Becker, 1964; Mincer, 1974). Two key demographic characteristics such as formal education and previous work experience underlie the concept of human capital (Becker, 1964). a founder's level of formal education is calculated based on a classification of the founder's information according to two levels. The higher level is a master's or doctorate degree. The lower level is an undergraduate degree or lower. The previous work experience takes on the value 1 if a founder has worked in a related industry before and 0 otherwise. The functional background takes on the value 1 if a founder's undergraduate major or career experience is in output functions and 0 otherwise.

Results

Descriptive statistics and correlations

Table 1 presents means, standard deviations, and correlations for the measures. VIFs (variance inflation factors) for all the regression models are less than 2, which are well below the guideline of 10 recommended (Chatterjee and Hadi, 2006).

Table 1 Descriptive statistics and correlations

	Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1	IT software	.47	.50										
2	IT hardware	.49	.50	-.93**									
3	Communications and broadcasting	.04	.19	-.18*	-.19*								
4	KOSDAQ market index	705.41	232.91	.10	-.09	-.02							
5	Yearly sales before IPO	315.73	368.38	-.04	.09	-.13	-.03						
6	Level of education	.29	.46	-.13	.11	.05	-.06	.02					
7	Related industry experience	.45	.50	.01	.01	-.04	-.09	-.10	.01				
8	Alliance with a business group	.51	.50	.01	.02	-.07	-.10	-.07	-.07	.34**			
9	Venture certification	.56	.50	-.04	.07	-.09	-.07	-.09	-.09	.20**	.22**		
10	VC investment	.75	.43	.18*	-.13	-.14	-.10	-.11	-.09	.33**	.47**	.49**	
11	Time to IPO	6.20	2.46	-.10	.04	.17*	.05	.04	.06	-.31**	-.65**	-.36**	-.50**

n = 170, * p < .05; ** p < .01

The features of the sample firms are described as follows. The yearly sales just before the IPO are 315 billion won on average and we can define those firms are SMEs. In the IT industry, less than 1% of firms are in communications and broadcasting, 47 % of the firms are in the IT software (internet, software, computer services, and digital contents), and 49 % of the firms are in IT hardware (communications equipment, IT equipment, semiconductors, and components). The founders with a master's or doctoral degree constitute 29 %, and with related industry experience 45 %. 51 % of the firms had alliances with BGs and 56% of the firms are certified as venture companies. 75% of the firms obtained VCs investment. The dependent variable, the time to IPO, it is 6.2 years on average.

Main analysis

To test the hypothesis, the present study adopts the four steps of Baron and Kenny (1986). Baron and Kenny (1986) suggest four steps to establish mediation. Step 1 requires that the independent variable is significantly related to the dependent variable; step 2 requires that the independent variable is significantly related to the mediator; step 3 requires that the mediator affects the dependent variable while controlling for the effect of the independent variable. And finally, when these conditions are satisfied, step 4 requires that the effect of the independent variable on the dependent variable is insignificant when controlling for the mediator in order to indicate complete mediation; otherwise partial mediation is indicated. The effects in both steps 3 and 4 are estimated in the same regression equation.

Model 1 tests the relationship between independent variables and firms' growth which explain control variables, independent variables, and the dependent variable of time to IPO. Among the control variables, related-industry experience of an entrepreneur ($p < .01$), BG collaboration ($p < .01$) and venture certification ($p < .01$) are negatively significant to time to IPO.

Table 2. Results of regression analyses

	Model 1 Time to IPO	Model 2 VC's investment	Model 3 Time to IPO
Constant		-3.098**	
Control			
IT S/W	-.119	1.395**	-.010
IT H/W(ref)			
Communications and broadcasting	.418	-.548	.255
KOSDAQ index	-1.055		.015
Sales	.499		1.184

High academic degree	-.021	-.127	-.031
Prior experience in a related industry	-.382**	.955*	-.348*
Independent variable			
BG collaboration	-1.627**	2.010**	-1.563**
Venture certification	-.616**	2.372**	-.320*
Mediating variable			
VC investment			-.666**
-2Log Likelihood	1303.463	145.120	1293.539
Chi-square	119.849**		127.989**
Cox and Shell R^2		.409	

n = 170, * p < .05; ** p < .01

Model 2 tests the relationships stated in Hypotheses 1-1 and 1-2, explaining the dependent variable of VC's investment. IT S/W and Related-industry experience of an entrepreneur in control variables are positively significant to VC's investment, BG collaboration ($p < .01$) and venture certification ($p < .01$) are positively significant to VC's investment. However, the relationship between level of education of an entrepreneur and VC's investment is not significant. Therefore, Hypotheses 1-2 and 1-2 are supported.

In the final step of the mediation analysis, the growth of NTV was regressed on independent variables, VC's investment, and the control variables. Model 3 indicates that the negatively significant relationship ($\beta = -1.627$, $p < .01$ between BG collaboration and time to IPO becomes weaker ($\beta = -1.563$, $p < .01$) when the alliance with VCs' investment is entered into the equation ($p < .01$). The negatively significant relationship ($\beta = -.616$, $p < .01$ between venture certification and time to IPO becomes weaker ($\beta = -.320$, $p < .01$) in the same manner. As a conclusion, VC's investment has a partial mediating effect. Thus, hypotheses 2-1 and 2-2 are supported.

Discussions

The purpose of this study is to examine how VCs in developing countries invest in new technology ventures. The core of tested models can be recapitulated as follows: (1) the endorsements by respectable organizations influence the likelihood of VCs' investment; and (2) VC's investment may have mediating effects on the relationship between the endorsements by respectable organizations and NTVs' growth. In the results, collaboration with BGs and

certification of government are positively associated with NTVs' obtaining VC's investment. And VC's investments are helpful for the growth of NTVs.

The research contribution of this study is to expand the entrepreneurship research field by developing and testing a mediating model that provides an explanation of the NTV performance relationship in the context of developing countries. From a signalling theory perspective, it is important to understand the resource providers which lure VC's investment as a linkage between external endorsement and the NTV growth in a developing country.

And, the results of this study provide practical implications to the entrepreneurs of NTVs and policy makers in developing countries. First, because there is market failure in developing countries, VCs judge the endorsement by BGs and government as an important factor for their investment decision making. Therefore, entrepreneurs of NTVs in developing countries should collaborate with BGs or get certification form government strategically. And policy makers in developing countries should introduce the relevant policy that can give a variety of incentives to BGs which collaborate with NTVs and should build up the certification system to select the promising NTVs.

Nevertheless, this study has some limitations. I adopt time to IPO as a measure for venture performance. Related research measures the time to IPO as the indicator of NTV's growth (Chang, 2004; Deeds, et al., 1997a; 1997b; Stuart, et al., 1999). I believe this event is a meaningful interim measure of an NTV performance because plenty of financial resources are required to maintain venture firm consistency. This measure is not perfect since not all the ventures decide to go public. Thus, I acknowledge the limitation in using time to IPO as a performance indicator. In the future, using diverse dependent variables would significantly improve our understanding on the signalling mechanism of external endorsement. This study adopts time to IPO as a dependent variable to investigate the signalling effect of external endorsement. Prior research measuring NTV performance with market value in the process of IPO as well as time to IPO (Stuart, et al., 1999) has shown that the influence of resource holders signalling mechanism on time to IPO and firm value evaluation are differentiated. Time to IPO is a firm performance indicator and this suggests that for resource holders who provide resources for firm growth it may serve an important role as a signal of promising performance in the growth stage of ventures, while market value at IPO can be used to measure how the ventures are valued in the IPO process. Prior studies argue that underwriters, institutional investors and individual investors act as a signal and so influence market value at IPO (Megginson and Weiss, 1991; Podolny, 1993). These signalling effects may be helpful to new ventures that have not yet proven to be viable. Further study is thus

necessary in order for us to understand the exact nature and extent of these relationships.

This study also encourages future research to identify the role of endorsement by government support in other types and countries. Many governments are keenly interested in nurturing their new ventures as they can create new employment, develop new technology, and contribute to national economic growth (Acs and Audretsch, 1990). Due to these positive externalities coming from the promotion of new business start-ups, the government needs to distribute more resources to new start-ups than free markets typically do. Namely, because venture capitalists make their commitments for a capital gain, they are not concerned with positive socio-economic externalities. Recently, the governments in advanced countries provide more indirect supports in regulation, policy, and certification rather than direct ones financially (USSA, 1995; OECD, 1997). The governments have limited resources but are interested in maximizing the effect of distributing more resources to promising firms. Therefore, they try to find indirect supports to play the role of endorsement to induce other resource holders to provide their resources favorably. Research finding this issue will be helpful for the governments which are considering indirect support.

References

Acs, Z., Audresch, D. B. (1990). *Innovation and small firms*. Cambridge: MIT Press.

Aldrich, H., Fiol, M. (1994). Fools rush in? The institutional context of industry creation. *Academy of Management Review, 19*, 645–670.

Audretsch, D.B. (1995). *Innovation and industry evolution*. Cambridge: The MIT Press.

Baron, R. M., Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173-1182.

Bates, T. (1995). Self-employment entry across industry groups. *Journal of Business Venturing, 10*(2), 143-56.

Baum J, Silverman B. (2004). Picking Winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. *Journal of Business Venturing, 19*(3), 411-436.

Becker, G. S. (1964). *Human Capital: a Theoretical and Empirical Analysis*. Columbia University Press: New York.

Bruderl, J., Preisendorfer, P., Ziegler, R. (1992). Survival chances of newly founded business organizations. *American Sociological Review,* 227-242.

Baum, J. (1996). Organizational ecology. In: Clegg, S., Hardy, C., Nord, W. (Eds.), *Handbook of Organization Studies* (pp. 77–114). London: Sage Publications.

Carpenter R. E., Petersen B. C. (2002a). Capital market imperfections, high-tech investment, and new equity financing. *Economic Journal*, 112, 54–72.

Carpenter R. E., Petersen B. C. (2002b). Is the growth of small firms constrained by internal finance? *The Review of Economics and Statistics, 84*, 298–309.

Castanias, R. P., Helfat, C. E. (1991). Managerial resources and rents. *Journal of Management, 17*(1), 155-171.

Chang, S. J. (2004). Venture capital financing, strategic alliances, and the initial public offerings of internet startups. *Journal of Business Venturing, 19*(5), 721-741.

Chatterjee, S., Hadi, A. S. (2006). *Regression analysis by example*. New Jersey: John Wiley and Sons.

Cohen, W. M., Daniel A. L. (1990). Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly, 35*, 128-152.

Colombo, M. G., Grilli, L. (2007). Funding gaps? Access to bank loans by high-tech start-ups. *Small Business Economics, 29*(1), 25-46.

Deeds, D., Mang, P., Frandsen, M. (1997a). The impact of firm-specific capabilities on the amount of capital raised in an initial public offering: evidence from the biotechnology industry. *Journal of Business Venturing, 12*, 31-46.

Deeds, D., Mang, P., Frandsen, M. (1997b). The quest for legitimacy: a study of biotechnology IPO's. *Frontiers of Entrepreneurial Research*, 533-543.

DiMaggio, P., Powell, W. (1983). The iron cage revisited: institutional isomorphism and collective rationality in organizational field. *American Sociology Review, 48*, 147–160.

Eisenhardt, K. M., Schoonhoven, C. B. (1996). Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. *Organization Science*, 136-50.

Ernst, D. (2005). Pathways to innovation in Asia's leading electronics-exporting countries-a framework for exploring drivers and policy implications. *International Journal of Technology Management, 29*(1), 6-20.

Ernst, D., Naughton, B. (2008). *China's emerging industrial economy: Insights from the IT industry*. London: New York: Routledge.

Fichman, M., Levinthal, D. (1991). Honeymoons and the liabilities of adolescence: a new perspective on duration dependence in social and organizational relationships. *Academy of Management Review. 16*, 442–468.

Freeman, J. (1999). Venture capital as an economy of time. In Leenders RTAJ, Gabbay S (Eds.), *Corporate Social Capital and Liability* (pp.460-482), Norwell, MA. Kluwer Academic Publisher.

Gompers, P. A., Lerner, J. (1997). Risk and reward in private equity investments: the challenge of performance assessment. *Journal of Private Equity, 1*(2), 5-12.

Granovetter, M. S. (1995). *Getting a job: a study of contacts and careers*. Chicago: University of Chicago Press.

Green, P. G., Brush, C. G., Hart, M. M. (1999). The corporate venture champion: a resource-based approach to role and process. *Entrepreneurship Theory and Practice, 23*, 103-122.

Griliches, Z. (1998). R&D Productivity. University of Chicago Press: Chicago, IL.

Guthrie, J. P., Grimm, C. M., Smith, K. G. (1991). Environmental change and management staffing: An empirical study. *Journal of Management, 17*(4), 735-748.

Henderson, R., Cockburn, L. (1994). Measuring competence? Exploring firm effects in pharmaceutical research. *Strategic Management Journal, 15* (special issue), 63-84.

Jain, B. A., Kini, O. (1994). The post-issue operating performance of IPO firms. *Journal of Finance*, 1699-1726.

Khanna, T., Palepu, K. (1997). Why focused strategies may be wrong for emerging markets. *Harvard Business Review, 75*(4), 41-51.

Khan, A. M. Manopichetwattana. V. (1989). Innovative and non-innovative small firms: Types and characteristics. *Management Science, 35*(5), 597-606.

Kirzner, I. M. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of Economic Literature, 35*(1), 60-85.

Kogut, B., Zander, U. (1996). What firms do? Coordination, identity, and learning. *Organization Science, 7*, 502-518.

Lach, S. (2000). Do R&D subsides stimulate or displace private R&D? Evidence from Israel. Working Paper 7943, *National Bureau of Economic Research, Inc.*

Lee, B. (2002). The growth of venture businesses and policy recommendations. *Regulatory Research 11*, 2, 119.

Lerner J. (1999). The government as venture capitalist: the long-run impact of the SBIR program. *Journal of Business, 72*(3), 285-318.

MacMillan, I. C., Siegel, R., Narasimha, P. (1985). Criteria used by venture capitalists to evaluate new venture proposals. *Journal of Business Venturing, 1*(1), 119-128.

McMullen, J. S. Shepherd, D. A. (2006). Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *The Academy of Management Review, 31*(1), 132-152.

Megginson, W. L., Weiss, K. H. (1991). Venture capitalists certification in initial public offerings. *Journal of Finance, 46*(3), 897-903.

Mincer J. (1974). *Schooling, experience and earnings.* Colombia University Press: New York.

OECD (1997). *Best practice policies for SMEs venture business policy in Korea and its implication.* Paris: Publications Service.

Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review, 16*, 145–179.

Peneder, M. (2008). The problem of private under-investment in innovation: a policy mind map. *Technovation 28*(8), 518-530.

Podolny, J. M., Stuart, T. E. (1995). a role-based ecology of technological change. *American Journal of Sociology, 100*, 1224-1260.

Podolny J. M. (2001). Network as the pipes and prisms of the market. *American Journal of Sociology, 98*(4), 829-872.

Podolny, J. M. (1993). a status-based model of market competition. *American Journal of Sociology, 98*, 829-872.

Porter, M. (1980). Competitive Strategy Free Press, New York.

Ratajczak-Mrozek, M. (2012). Global Business Networks and Cooperation within Supply Chain as a Strategy for High-Tech Companies' Growth. *Journal of Entrepreneurship, Management and Innoation, 8*(1), 35-51.

Schultz, T. (1959). Investment in man: An economist's view. *Social Service Review, 33*(2), 69-75.

Spence, A. M. Michael, A. (1974). *Market signaling: Informational transfer in hiring and related screening processes.* Cambridge: Harvard University Press.

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics, 87*(3), 355-374.

Stuart, T. E. (2000). Inter-organizational alliances and the performance of firms: a study of growth and innovation rates in a high technology industry. *Strategic Management Journal, 21*(8), 791-811.

Stuart, T. E., Hoang, H., Hybels, R. C. (1999). Inter-organizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly, 44*(2), 315-349.

Suchman, M. (1995). Managing legitimacy: strategic and institutional approaches. *Academy of Management Review, 20*, 571–610.

Tan, W. C., Tay, R. S. (1994). Factors contributing to the growth of SMEs: the Singapore case. In Proceedings of the *5th ENDEC World Conference on Entrepreneurship,* Singapore: 150-161.

Teece, D. J. (1996). Firm organization, industrial structure, and technological innovation. *Journal of Economic Behaviour & Organization, 31*(2), 193-224.

Timmons, J. A., Bygrave, W. D. (1986). Venture capital's role in financing innovation for economic growth. *Journal of Business Venturing, 1*(2), 161-176.

Tuma, N. B. Hannan, M. T. (1984). *Social dynamics: Models and methods.* New York: Academic Press.

Tushman, M. L. Rosenkopf, L. (1992). Organizational determinants of technological change: Toward a sociology of technological evolution. *Research in Organizational Behaviour, 14*, 311-331.

USSBA (1995). *Foundation for a New Century*, USA.

Utterback, J. M., O'neill, R. (1994). *Mastering the dynamics of innovation: How companies can seize opportunities in the face of technological change.* Boston: Harvard Business School Press.

Weick, K. E. (1996). Drop your tools: An allegory for organizational studies. *Administrative Science Quarterly, 41*(2), 301-313.

Zimmerman, M. A. Zeitz, G. J. (2002). Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management Review, 27*, 414-431.

Abstrakt (in Polish)

Niniejszy artykuł bada, jakiego rodzaju zewnętrzne wsparcie jest pomocne dla inwestycji typu venture capital oraz dla rozwoju przedsięwzięć dotyczących nowych technologii. Praca ta korzysta z teorii sygnalizacji oraz metodologii wielokrotnej regresji oraz analizy przetrwania, wykorzystując dane panelowe dotyczące przedsięwzięć powstałych w Korei. Wyniki pokazują, ze współpraca z grupami biznesu oraz poświadczenie przez rząd mają pozytywny wpływ na przyciągnięcie inwestycji typu venture capital, które przyspieszają wzrost przedsięwzięć dotyczących nowych technologii. Praktyczna implikacja dla przedsiębiorców jest taka, że potrzebują oni uzyskać strategiczne wsparcie od grup biznesu oraz rządu.

Słowa kluczowe: *tworzenie przedsięwzięć dotyczących nowych technologii, mały biznes, teoria sygnalizowania, venture capital, pierwsza oferta publiczna.*