

Factors Affecting Entrepreneurial Innovation Capability: Empirical Evidence of Gem and Jewelry Businesses in Thailand

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Abstract

Currently, many businesses operation have faced business environment resulting the need to understand and adapt to appropriately respond to circumstance. Entrepreneurial innovation capability is, therefore, interested the researcher for the investigation. Entrepreneurial innovation capability is the organization's ability to develop the new method for the operation allowing businesses increase higher competitiveness than competitors. This also helps the businesses get the competitive advantage leading to the success at the end. This research aimed at investigating both internal and external factors influencing the entrepreneurial innovation capability of gem and jewelry businesses in Thailand. The samples were 127 managing directors and managing partners of gem and jewelry businesses in Thailand. The data collection was manipulated by mail survey. For the statistics used in analyzing data, multiple regression analysis was employed for the hypothesis testing. The results revealed that competitive pressure, market-driving vision, organizational resource readiness and business experience complementarity had the positive and significant effect on entrepreneurial innovation capability. The results also showed the insight understanding about the antecedents of entrepreneurial innovation capability and it can be used to rapidly changing environment.

Keywords: Entrepreneurial Innovation Capability, Market-Driving Vision, Business Experience Complementarity, Organizational Resource Readiness, Technological Change, Competitive Pressure

1. Introduction

The current rapidly changes of consumer behavior, increase new competitors and modern technology as a result of the operation businesses has become dynamic, complex and difficult to predict. These changing are allowing businesses to create new knowledge and changing competitive method resulting in overall performance (O'Regan, Ghobadian and Sims, 2006). Importantly, business achievement is reflecting about management capability with many differentials environments. Consequently, businesses need to increase new way bringing the opportunity to add wealth and use of exploit. Therefore, entrepreneurial innovation capability is one interesting issue that allows businesses to favorably deal with environment leading to create continually competitive advantage and achievement.

Entrepreneurial innovation capability indicates the support of new ideas, experiment and the creative process that will produce new product, service or process. In this research, entrepreneurial innovation capability is combining between entrepreneurship and innovation perspective. It refers to the organization's ability to new organizational development in the operation resulting in competitive effectiveness beyond competitors and success. In addition,

entrepreneurial innovation capability reflects on the support about innovative, proactive, risk-taking, competitive aggressiveness and firm's independence. According to organizational learning theory, business that has the ability to learn to be a better chance of recognizing events and trends in the marketplace as well (Skerlavaj, Song and Lee, 2010). Especially, the learning about internal and external factors influences the operation. Consequently, organizations are learning the internal and external environment that is contributed to new knowledge development, clearly understand, more operational flexible and create opportunities respond to new challenges over competitors (Jimenez and Valle, 2011; Wang, 2008).

As mentioned earlier, it can be seen that both internal and external factors have a significant influence on the ability to develop new operational ways. The previous research indicated that the importance of proactive vision is looking ahead for planning to achieve long-term goals by the bringing existing resources to provide the benefits in competitor retaliation (Collins and Porras, 1991). The source of information for operating and treating competitors as well as responding to customer needs through the advancement of techniques and systems is based on the available resource of businesses (Gil and Hartmann, 2006). In addition, focusing on the role of exploiting experience is the ability able to improve products and processes, as well as the understanding of new things better than a competitor (Majocchi, Bacchiocchi and Mayrhofer, 2005). Meanwhile, the advanced technologies and know-how to reflect market changes are factors supporting learning for adapt quickly (Wang et al., 2015). These factors are significant and effective to the ability in developing new method for the operation that lead to competitive advantage.

However, there was no study has examined the relationships among these constructs in a combination. Based on a review of relevant literatures, this research highlights the antecedents to entrepreneurial innovation capability as the constructs of market-driving vision, business experience complementarity, organizational resource readiness, technological change and competitive pressure. Thus, the aim of this research was to investigate internal and external factors that influence on entrepreneurial innovation capability. Moreover, this research was conducted with gem and jewelry businesses, because these businesses have to face the consumer behavior changing and new emerging competitors. In addition, gem and jewelry businesses were small and medium sized enterprises having sensitive adaptation and need to the operation based on new method for identity creation and competitive advantage through new product. This research also helped fulfill the understanding in entrepreneurship and innovation perspective, and expand the concept of organizational learning theory using phenomenon in gem and jewelry businesses. Importantly, this research had benefits to help improve the better operational business under uncertainty environment that creates competitiveness beyond competitors and achievement.

2. Literature review and hypotheses development

The theoretical perspective indicated organizational learning is the ability to drive an organization and can explain why a company is so successful over its competitors (Bapuji and Crossan, 2004). The businesses with a view to learning for the application and maintainable of business's ability which is the key for improvement and is not exclusion by the current business model or practice that is more likely to discover new ways to better meet customers (Hanvanich, Sivakumar and Hult, 2006). Moreover, businesses operation supported by the new knowledge from learning and understanding internal and external environment that affect the business flexibility and responding to the challenges and new ways in operation more quickly than their competitor.

Consequence, the organizational learning theory is fundamental to explain the relationship of antecedents of entrepreneurial innovation capability which the conceptual framework is showed presented the relationship of the construct in Figure 1 as below:

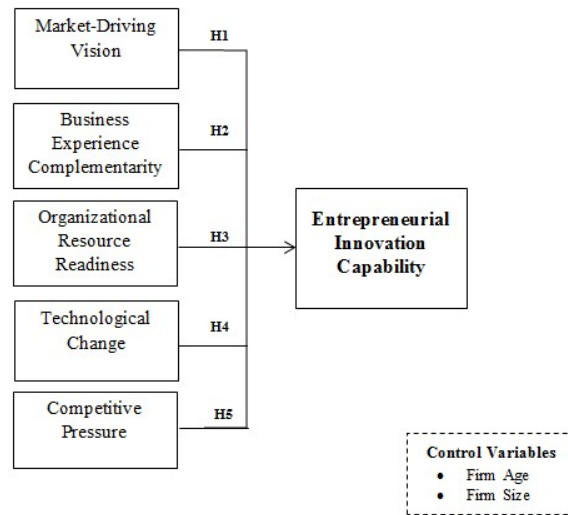


Figure 1: A Conceptual Framework

Entrepreneurial Innovation Capability

On the basis of the relevant literature review, entrepreneurial innovation capability is a result of the integration of entrepreneurship and innovation perspective. This research concentrates on the entrepreneurial innovation capability by developing the concept of Lumpkin and Dess (1996). Entrepreneurial innovation capability, therefore, refers to the organization's ability to develop the new method for the operation allowing businesses increase higher competitiveness than competitors. This organizational ability is develop and refine a new way to support practices, processes, and the decision-making activities involving with the operation in order to contribute the opportunity to enter new markets and to modify the operation under the remaining dynamic environment. Business success depends on innovative behavior and the ability to determine competitive strategy, implementation, and response to market challenge (Wang et al., 2015). The operation under the capabilities efficiency, customer response and exceed competitors result in successful as well (Covin, Green and Slevin, 2006). Hence, these results in businesses must pay attention to both internal and external environments in order to develop new method that lead to the adaptation, potential operational creation and increase competitiveness. These lead to the explanation of the understanding and response of both internal and external environments as following detail below.

The Effect of the Antecedents on Entrepreneurial Innovation Capability

This research concentrates the study of internal and external factors impact to entrepreneurial innovation capability that comprises internal factors as market-driving vision, business experience complementarity and organizational resource readiness. In addition, external factors consist of technological change and competitive pressure follow as below.

Market-driving Vision

Market-driving vision refers to the perspective in creating goal-oriented concepts that focus on going ahead in the future of a company. It is also the basis of motivation, planning and goal determination that are likely to create the effectiveness in operation and achievement of the organization. The basis for setting vision is that a leader should have a priority to track and analyze the internal and external environment that is beneficial to stakeholders for vision processes in marketing and technology views (Sarpong and Maclean, 2012), and important customer views. A vision that is focused on looking ahead is useful for planning to achieve long-term goals by the bringing existing resources to provide the benefits in competitor retaliation. The predicted events may occur and seek protection, and the policy covers the needs of customers in the present and the future as well. Meanwhile, proactive firms dedicate effort to environmental scanning and monitoring for new trends, and stay with the competition (Sciascia, Naldi and Hunter, 2006). Moreover, a market-driving vision allows an organization to have an entrepreneurial innovation capability as to competitiveness. Thus, this research proposed the hypothesis follow as:

Hypothesis 1: Market-driving vision has a positive effect on entrepreneurial innovation capability.

Business Experience Complementarity

The experience of the business is the company's ability to bring past applications to the capabilities that exist at present, leading to higher potential and superior efficiency over competitors (Ucbasaran et al., 2010). For this research, business experience complementarity refers to bringing operations in the past of the company, and applying it to the current ability in order to create knowledge and new opportunities of business as well as increase higher potential and performance than competitors. When an organization has employed the previous experience in operating, this help to link and understand the circumstances faced in the past and also helps finding solution for the current situation. This consistent with the previous study of Davidsson and Honig (2003) which found that previous experience of the entrepreneurship will have a positive relationship with the possibility of entering into the initiation of entrepreneurship and making progress in taking advantage of new opportunities. Thus, this research proposes the hypothesis as follows:

Hypothesis 2: Business experience complementarity has a positive effect on entrepreneurial innovation capability.

Organizational Resource Readiness

Organizations with the readiness of resources can develop the new potential method for operation. In this research, organizational resource readiness refers to the integrity of both tangible and intangible factors supporting in the working process of a business. These factors are valuable for companies in creating efficiency, and are effective in delivering value to the market and operations by achieving set goals. Moreover, research related to entrepreneurship suggested that the available resources made by the company are resources allow utilization in the drive for the creation of an entirely new product, process, and system for the company. It can lead to competitiveness over rivals and gain a competitive advantage leading to success (Bradley, Wiklund and Shepherd, 2010). This is consistent with the previous research of Paradkar, Knight and Hansen (2015) which found that the commercial success of innovation depends on the relationships of the value of assets and the capability of the resource base. Thus, this research proposes the hypothesis as follows:

Hypothesis 3: Organizational resource readiness has a positive effect on entrepreneurial innovation capability.

Technological Change

The role of technology is important in contributing to increased performance and enables the advantage of success over the competition (Huang, 2011) as well as being a driving force for economic growth, productivity, creating new products, and process innovations (Newbert, Gopalakrishnan and Kirchhoff, 2008). Technological change refers to the advancement of technology that contributes to the creation of new innovation, a continuous process of technological improvements, and the distribution of business driven by productivity, to support the process of new link to the goal achievement of organizations. Technology change is a breakthrough that encourages companies to apply, synthesize, and adopt the gathered information which is suitable with the organization. Indeed, technological change also helps develop new products, services, or administrative processes more efficiently and ultimately with better performance which is consistent with the study of Rojas, Morales and Ramos (2013). Thus, this research proposed the hypothesis as follows:

Hypothesis 4: Technological change has a positive effect on entrepreneurial innovation capability.

Competitive Pressure

The dynamics environment reflects the intensity level that the company also faces from competition within the industry (Gu, Hung and Tse, 2008). The external business environment of the firm can have an influence upon the internal process by creating or suitably matching which can help companies to have better performance (Chen et al., 2015). In this research, competitive pressure refers to the competitive situation between competitors in the intense market and the lack of opportunity to generate future growth. As a result, businesses must find new ways in competition to create a competitive advantage and to help a firm to be successful. From the entrepreneurship literatures, companies must observe closely the wide range of uncertainty such as innovation technology, threat of new entrants, and supplier risk (Li and Liu, 2014) and changing customer needs. These operations will allow the company to recognize the situation and the expected trend that might occur and be able to impose approaches in response to those events before the competitors as well. As a result, competitive pressures are factors that drive business changes and lead to new business opportunities. Thus, this research proposed the hypothesis as follows:

Hypothesis 5: Competitive pressure has a positive effect on entrepreneurial innovation capability.

3. Research Methodology

Sample Selection and Data Collection Procedure

The samples in this entrepreneurial innovation capability research were 626 gem and jewelry businesses derived from the Department of International Trade Promotion, Ministry of Commerce. Gem and jewelry businesses were suitable for this research because it is the small and medium enterprises that have been recognizing in the global market. In addition, it is one of the export industries that can increase the incomes for country. Meanwhile, they are facing a variety of consumer behavior and the increase of competitors. As a result, businesses need to be more entrepreneurial and innovative to find competitive advantages that are different from competitors and to create a stable market position (Shirokova et al., 2016). Moreover, gem and jewelry businesses have adapted to implement the quick and flexible operation based on the

development of the capabilities of the organization to bring the new way of operation for both domestic and abroad competitions. Furthermore, questionnaire mail survey is a tool for the data collection. It was directly sent to the managing directors or managing partners who had the authority decision making and who had the insight understanding of operational business. All questionnaires were sent in June 2016 and follow-up letters were also sent after four weeks to firms that had not yet replied. Finally, 127 completed questionnaires were sent back calculating for approximately response rate 22.04 percent which is considered acceptable and sufficient for the further analysis according recommend to Aaker, Kumar and Day (2001). Moreover, the multiple regression analysis was used for hypotheses testing in this research.

Measurements

The construct of measurement was developed from the definition and literature review having the development process as a multiple items in each construct. These variables are measured by a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree) as follows:

Entrepreneurial innovation capability is measured through firm innovativeness, the independence operation, the understanding and coping with uncertainty situation, the competition analysis focusing on customer and competitors in the future. To measure entrepreneurial innovation capability, twenty items were developed from Lumpkin and Dess (1996; 2001).

Market-driving vision is measured through the operations focusing on the future, competitive analysis trends, the allocated budget for the development of products and services, the investment in operational technology, and personal training. These items were measured using five items and developed from Jaworski, Kohli and Sahay (2000).

Business experience complementarity is measured by the good past experience, management, integration, and application of past knowledge and ability to guide the implementation, resulting in the effectiveness of the organization. These items were measured using four items and developed from Ucbasaran et al. (2010).

Organizational resource readiness is measured by the availability of existing resources having appropriate knowledge and ability for employees, the improvement of operational databases, and the application of new methods which is sufficient to cause the efficiency and effectiveness of operations. These items were measured using four items and developed from Edelman, Brush and Manolova (2005).

Technological change is measured by the progress and technology development which is beneficial for the operations of the company. These items were measured using four items and developed from Jaworski and Kohli (1993) and Slater, Hult and Olson (2010).

Competitive pressure is measured by situation that business facing diverse needs of customers, the emergence of new competitors, the differences of the product, and market growth which will contribute to the company's management to be more efficient. These items were measured using four items and developed from Yasamorn and Ussahawanitchakit (2011).

The control variable in this research is firm age and firm size. The previous research indicated that older firms will have more opportunities to understand the process, while younger firms hold the flexibility and learning ability needed to adapt (Dai et al., 2014). Thus, firm age was measured by years of the operations and represented by a dummy variable (0 = all firms that have experience of operations of 15 years or less, and 1 = all firms that have experience of operations more than 15 years). In addition, previous research has shown that firm size impact to operate a business capability (Shirokova et al., 2016). Therefore, firm size

was measured by the number of full-time employees and represented by a dummy variable (0 = total employees less than 50, and 1 = total employees that are equal to or more than 50).

Validity and Reliability

This research has conducted validity and reliability test of the questionnaires. The content validity is employed by two experts who verified, recommended and improved the questionnaires corresponding with the conceptual definition recommended by Nunnally and Bernstein (1994). Meanwhile, the first set of 30 returned questionnaires were considered to construct validity and reliability. The construct validity was measured through factor loading which found the value between 0.664 – 0.960, which exceeds the acceptable should be greater 0.4 cut-offs (Nunnally and Bernstein, 1994). The reliability measurement is considered by Cronbach's alpha coefficients that showed value between 0.784 – 0.934, greater than 0.7 to ensure the internal consistency (Hair et al., 2010) as shown in Table 1.

Table 1: Results of Measure Validation of Entrepreneurial Innovation Capability and Its Antecedents

Constructs	Factor Loadings	Alpha Coefficient
Entrepreneurial Innovation Capability (EIC)	.664 - .773	.934
Market-Driving Vision (MDV)	.752 - .901	.882
Business Experience Complementarity (BEC)	.710 - .893	.857
Organizational Resource Readiness (ORR)	.736 - .854	.825
Technological Change (TCH)	.795 - .960	.927
Competitive Pressure (CPR)	.675 - .851	.784

The multiple regression analysis was manipulated for hypotheses testing in this research. The equation model for statistical analysis was presented as follows:

$$\text{Equation: } EIC = \alpha_1 + \beta_{01}MDV + \beta_{02}BEC + \beta_{03}ORR + \beta_{04}TCH + \beta_{05}CPR + \beta_{06}FA + \beta_{07}FS + \varepsilon_1$$

4. Results and Discussion

This results had the correlation value of all variables in the conceptual model between 0.303 – 0.666, $p < 0.01$ which showed that independence variable had no relationship with other variables in as presented in Table 2.

Table 2: Descriptive Statistics and Correlation Matrix of Entrepreneurial Innovation Capability and Its Antecedents

Variables	EIC	MDV	BEC	ORR	TCH	PRE
Mean	4.01	3.69	3.92	3.89	3.93	4.13
S.D.	.50	.61	.57	.57	.63	.54
EIC	1					
MDV	.609***	1				
BEC	.540***	.594***	1			
ORR	.625***	.666***	.655***	1		
TCH	.400***	.381***	.485***	.485***	1	
CPR	.516***	.524***	.303***	.492***	.525***	1
FA	-.004	.115	.028	-.043	.064	.114
FS	-.060	.133	-.056	-.026	.099	.229***

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

For the multiple regression analysis in Table 3, the results demonstrated that market-driving vision was significantly and positively effect on entrepreneurial innovation capability

($\beta_{01}=0.249$, $p<0.05$) which is consistent with expectation. Vision-setting is a basic that leaders should give priority to in the process of focusing on marketing and technology (Sarpong and Maclean, 2012) including a focus on the customer's perspective as well (Von Hippel, 2005). Vision-setting determine the future direction into operational reality. This will reduce the risk which is expected to occur, increase competitive ability, and enable achievement of long-term goals from searching new opportunities, and implementation approaches to meet the needs of customers. Moreover, it includes the counter-competition with competitors under intense competition exists which is consistent with the previous research of Sciascia, Naldi and Hunter (2006). Therefore, the determining direction of business in the future should focus on operational proactive and customer response that were essential. The access to consumer behavior based on market trends survey and competitor's competitive strategy were the methods that help to provide a guideline for developing new approaches for business operations. Meanwhile, businesses should pay attention to the existing potential and should clearly understand the strength and weakness in order to the determine the right and available direction in the future. **Thus, hypothesis 1 is supported.**

Secondly, business experience complementarity is a positive and significant effect on entrepreneurial innovation capability ($\beta_{02}=0.164$, $p<0.10$). This result showed the consistence with the expectation that operational business based on experience is capable to take the success or failure of past operations to lead to the appropriate applications for the current situation, and has potential for superior performance (Ucbasaran et al., 2010). The experience can also help increase the flexibility to decision-model development, and the creation of new ways. Moreover, the experience leads to new opportunities for business and increases competitiveness creation of new ideas that quickly lead to new products development to meet customer needs more than competitors (Covin and Lumpkin, 2011). Especially, businesses related to export context, the past operation is a good information source that helps increase learning and understands about business operation that will lead to the creation of new operation for the competitive in global market. **Thus, hypothesis 2 is supported.**

Table 3: Results of Regression Analysis of Entrepreneurial Innovation Capability and Its Antecedents

Independent Variables	Dependent Variables
	EIC
Market-Driving Vision (MDV): H1	.249** (.096)
Business Experience Complementarity (BEC): H2	.164* (.093)
Organizational Resource Readiness (ORR): H3	.219** (.101)
Technological Change (TCH): H4	-.005 (.083)
Competitive Pressure (CPR): H5	.265*** (.086)
Firm age (FA)	-.075 (.148)

Independent Variables	Dependent Variables
	EIC
Firm size (FS)	-.271* (.142)
Adjusted R ²	.492
Maximum VIF	2.523

*** p < 0.01, ** p < 0.05, * p < 0.10 Beta coefficients with standard errors in parenthesis

Thirdly, organizational resource readiness was positively significant influence on entrepreneurial innovation capability ($\beta_{03} = 0.219$, $p < 0.05$). The firms need to systematically scan both internal and external environments, especially for the evaluation of new combinations of existing technology, concepts and ideas, and new applications for existing competencies (McFadzean, O'Loughlin and Shaw, 2005). Particularly, the company that can build capability by linking specific resources such as the creation of a superior functional organization, and allowing access to resources efficiently result in achievement competitive (Oliver and Ripoll, 2014).

This is very crucial for, especially, the export context that face the turbulence competitive environment in global market, business had sufficient resources for performance which is simple to operate. These were beneficial for decisions-making and finding new ways to improve operations that provide progress beyond and before competitors under intense competitive environments. **Thus, hypothesis 3 is supported.**

Fourthly, technological change was not significant with the entrepreneurial innovation capability ($\beta_{04} = -0.005$, $p > 0.10$) which is inconsistent with the stated that the technological advance is supporting the business's operations lead to development and adoption for enterprises (Bradley et al., 2011). For gem and jewelry businesses in this research, technology was a factor contributed to the outstanding performance and was able to respond to market needs to quickly change. However, businesses have been using the technology in low level, as well as facing restrictions on investment and technology transfer skills. Moreover, it also found that human resources and materials management problems were major important issues that leader should solve (www.oic.go.th, accessed December 2016). Beside, some entrepreneurs might focus on increasing the marketing and ability to response the customer's needs. There is a possibility that the business should focus on the development of these factors more than the importance of technology. **Thus, hypothesis 4 is not supported.**

Finally, competitive pressure was positive and significant with entrepreneurial innovation capability ($\beta_{05} = 0.265$, $p < 0.01$). This result was consistent with expectation. Because, under increasingly competitive environments, innovation is partly results of a strong competitive advantage from an innovation process which is different beyond other companies (Veglio and Zucchella, 2015). The competitive environment makes companies faces the challenge of change, and also market growth which will be supported by the company to expand capacity in order to advance competition (Bhattacharya and Michael, 2008). Companies need to respond quickly to new opportunities and challenges for the growth and profit potential. This suggested that competitive pressures arising from uncertainty is a driving the creation of growth opportunities by the development of new method for the operation. **Thus, hypothesis 5 is supported.**

Contributions

Entrepreneurial innovation capability is important issue that enterprise especially gem and jewelry businesses should significantly prioritize due to the search of new operational methods increasing competitiveness and lead to success of businesses. Businesses can learn and understanding to the internal and external factors as well. It allows businesses to adapt the situation and to respond the challenges of competitors, and to react the changing consumer behavior. Therefore, this research benefited to explain and expand the understanding of entrepreneurship and innovation perspective. Furthermore, it also fulfilled the explanation of phenomenon that learning helps businesses in higher clarity and potential operation resulting in competitive advantage and firm success.

The result in this research recommended that executive should pay significant attention to both internal and external factors influence on entrepreneurial innovation capability. Importantly, the executive should, therefore, consider very seriously to the determine direction in the future. Especially, the determination on how to counter the competitor and to response customer needs by assess of customer needs from the survey on customers' trend as well as the direction in the future and competitive strategy of competitors.

It is actively encouraged to the business situation that expected to occur, and help determine the comprehensive vision and effective operation. Meanwhile, executive should pay attention to bring exist resource of business exploiting, particularly the supporting organizational ability to the development of new ways for the operation that rapidly and flexibly leads to the success of business.

In this research context, the personnel is also an important resource for the operation. The executives should, therefore, pay attention on recruitment process and training for developing the personnel. When businesses have enough and appropriate resources, they can operate effectiveness.

However, businesses that pay attention only on internal factor might not have enough competitive advantage. The executive should, therefore, pay attention on external factor influencing the business operation. The competitive environment is an issue that the executive need to learn, understand and analyze for the situational evaluation which leads to the determination strategy. This is a challenge for businesses how to operate business appropriately with existing resource and potential. Businesses need to integrate knowledge of customer needs, competitor's strategy and the experience of business in order to provide new method development for the competition. These could directly help business on operational effectiveness and a continuously competitive advantage and finally achievement.

5. Conclusions

This research focused on studying both internal and external environment that influence on entrepreneurial innovation capability leading to operational effectiveness and superior competitors. The purpose was to investigate the relationship of antecedents effect on entrepreneurial innovation capability. The data collection was conducted with gem and jewelry businesses and multiple regression analysis was employed for the hypothesis testing. The results revealed that business should concentrate on competitive pressure and market-driving vision. Furthermore, organizational resource readiness and business experience complementarity were also important which business should pay attention for creating and increasing the entrepreneurial innovation capability. This helps business to be quickly and continuously competitive and successful.

For the suggestion in future research, the research should moderate variable as learning culture because it is the critical process driving the emergence of new idea leading to better performance (Khazanchi, Lewis and Boyer, 2007). Thus, the moderating effect of learning culture is interesting to further study in entrepreneurial innovation capability.

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