THE ANTECEDENT AND CONSEQUENCE OF INNOVATION OF SMEs

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ABSTRACT

The objectives of this research were; firstly, to study the level of organizational dynamic, innovation, and business performance of Thai SMEs, secondly, to examine the differences in terms of organizational dynamic capabilities, innovation, and business performance of Thai SMEs when classified by organizational factors, thirdly, to investigate the influence of organizational dynamic capabilities on business performance through innovation. The focus target population includes SMEs entrepreneurs of Udon Thani province in Thailand, for a total of 1,037 enterprises. A sample was calculated according to the formula of Taro Yamane, and 400 samples were selected by proportional sampling and simple random sampling. Reliability testing was calculated by Cronbach's alpha coefficient values as follows; 0.915 of organizational dynamic capability, 0.945 of innovation and 0.864 of business performance. The statistics used for data analysis were frequency, percentage, mean, and standard deviation. The hypothesis has been tested by F-test (One Way ANOVA), Pearson product coefficient correlation, and Regression analysis.

The hypothesis testing: there was not difference in the level of organizational dynamic capability, innovation, and business performance when classified by organizational factors. The organizational dynamic capability can predict an innovation of 63.2%. Furthermore, it was found that the organizational dynamic capability presents a statistically significant positive influence on innovation by the standardized coefficients (β) was 0.795. For the second equation, organizational dynamic capability can predict a business performance of 54.2%, standardized coefficients (β) equals to 0.736. For the third equation, innovation can predict a business performance of 53.8% (adjusted R^2 0.538). In addition, it was found that the innovation has a statistically significant positive influence on business performance by the standardized coefficients (β) was 0.734. Therefore, it can be concluded that the organizational dynamic capability had statistically significant positive influence on business performance through innovation of SMEs.

Keywords - Organizational dynamic capability, Innovation, Business performance

INTRODUCTION

Background

Thailand has experienced continued economic growth over the recent years. The gross domestic product (GDP) in 2016 grew by 3.2%, compared with the 2.9% growth in the previous year, also because of the recovery of the global economy. The GDP of small and medium enterprises (SMEs) in 2016 was 6,061,143 million-baht, accounting for 42.2% of the national GDP. In 2016, according to the size of enterprise, Small Enterprises (SE) accounted for a GDP of 4,267.810 million baht, which represents an increase of 5.1%. Medium-sized enterprises (ME) had a GDP of 1,793.333 million baht, an increase over the previous year. In the first quarter of 2017, the country's GDP grew at a rate of 3.3%, and GDP expanded by 4.9%. The number of small and medium entrepreneur in 2016 was around 3 million, accounting for 99.7% of the total enterprises. There were 11,747,062 employed in SMEs, which translates into around 79.48 % of the total employment [19]. The current increase in number of entrepreneurships and the changing market environment at all times. Consequently, the capacity of coping with the dynamic environment is essential for increasing the chances of business success, and for creating competitive advantage for entrepreneurs. At the same time, consumer behavior is also shifting, technology is used in everyday life, and the Thai society itself is adapting to the innovation accordingly; nowadays, digital technology enables to reach people instantaneously at any time and, ideally, everywhere. Therefore, the organization of the national economic structure, including SMEs, must be innovated. For example, production processes should be updated and improved, in order to bring new products quickly to the market. SMEs entrepreneurs had to carefully consider

the relevant organizational and individual factors as well as the degree of innovation adoption in the organization in order to warrant their business successes in this modern business [17]. The important key drivers of the revenue and profit increases of the companies are the type of innovation that could produce higher-quality and lower-cost products [11]. Furthermore, the Thai government has set the policy of Thailand 4.0 as a policy vision for Thailand economic development or the economic development model of the government [20]. From the importance of content mention above was the reason of this research.

Objectives

This paper examines 5 objectives as follow; 1) The level of organizational dynamic capability of SMEs 2) The level of innovation of the SMEs 3) The business performance of SMEs 4) The differences in levels of organizational dynamic capability, innovation, and business performance when classified by the type of business groups 5) The effect of organizational dynamic capability on business performance by innovation as a mediator.

LITERATURE REVIEW

Organizational Dynamic Capabilities

"Dynamic Capabilities" to emphasize two key aspects that were not the main focus of attention in previous strategy perspectives. The term 'dynamic' refers to the capacity to renew competences so as to achieve congruence with the changing business environment; certain innovative responses are required when: time-to-market and timing are critical, the rate of technological change is rapid, and the nature of future competition and markets is difficult to determine. The term 'capabilities' emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment as described in Teece et al., [3]. Dynamic Capabilities are said to involve the sensing and shaping of opportunities and threats, seizing opportunities, and managing threats and reconfiguring the organization to maintain sustainable advantage [8]. In contrast to ordinary capabilities that enable firms to create and capture value through extant good or best practices, dynamic can enable firms to change their way of creating and capturing value through foresight, agility, business model innovation and forward-looking strategy. The sensing, seizing and reconfiguring aspects of dynamic capabilities are directly related to the acquisition and maintenance of Sustainable Competitive Advantage (SCA), especially in non-static environments [8]. Dynamic capabilities are the ability of an organization to create the ability to improve existing resources. The method of the organization used to adjust the available resources more appropriately than the ability or potential of the organization [5]. Organizational dynamic capabilities can be divided in 3 main categories: 1) Sensing: identification of opportunities and threats at home and abroad; 2) Seizing: mobilization of resources to deliver value and shape markets; and 3) Transforming: continuous renewal and periodic major strategic shifts. These activities are required if the firm is to sustain itself as markets and technologies change, although some firms will be stronger than others in performing some or all of these tasks [10]. To be consistent with the context of the study, this research divides the Organizational Dynamic Capabilities into three dimensions as follows: 1) Opportunity search; 2) Resource acquisition; 3) Organizational structure, adapted from the concept introduced by Teece [10] and Thantip [22].

Innovation

The term innovation is defined in two ways: 1) the introduction of something new, 2) a new idea, method, or device. Although similar, the two definitions for innovation present important distinctions. The first definition presents innovation as an outcome, while the second one as a process. Herein lays an important consideration for understanding innovation: Innovation should be thought of as both an outcome and process [23]. An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations. OECD [6] which is the primary international source for the guidelines for defining and assessing innovation activities, as well as for compilation and use of related data, has been taken as the main reference to describe, identify and classify innovations at firm level. Four different innovation types are introduced: on product, on process, on marketing and, finally, on organizational. Product and process innovations are closely related to the concept of technological developments, OECD [6]. 1) Process innovation is defined as a good or service that is new or significantly improved with respect to state-of-the-art. This includes significant improvements in technical specifications, components and materials, embedded software, user friendliness or other functional characteristics 2) Process innovation can be defined as a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software 3) Marketing innovation deal with a new marketing method involving significant changes in product design or packaging, product placement, product

promotion or pricing 4) Finally, organizational innovation is about a new organizational method in business practices, workplace organization or external relations. To be consistent with the context of the study, this research divides the innovation into four dimensions as follows; 1) product innovation 2) process innovation 3) organizational innovation 4) marketing innovation, by adapted from the concept of OECD [6] and Edison, Ali and Torkar [14].

Business performance

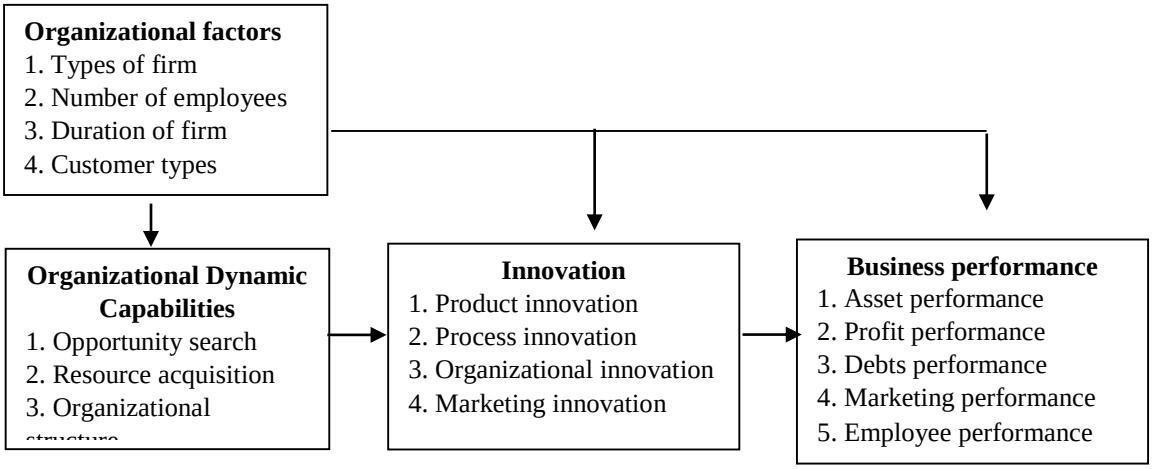
Business performance or firm performance is a subset of organizational effectiveness that covers both operational and financial outcomes. Business performance is defined as the operational ability to satisfy the desires of the company's major shareholders" and it must be assessed to measure an organization's accomplishment [4]. Business performance here is referred as the achievement of organizational goals related to profitability and growth in sales and markets share, as well as the accomplishment of general firm strategic objectives. To measure the business performance, most practitioners refer to the indicators that help companies to monitor its current and past performance. Most of the employed indicators are based on accounting measurement, such as return on investment (ROI), return on assets (ROA) and earnings per share, including turnover or number of customers [7]. However, scholars have often criticized the use of such accounting measures, as they primarily focus on economic dimension, and ignoring other aspects of a firm's performance. Measuring business performance in today's economic environment is a critical issue for organizations and business. Business performance measurement (BPM) is important to define several research areas of interest to both academics and practitioners, particularly management and psychology. Academics and practitioners used to assess business performance as a means to monitor the operation activities of an organization [15]. The BPM system categorizes business performance into two broad areas: 1) strategic business performance (SBP) and 2) operational business performance (OBP). SBP measures concern with the performance evaluation of organizations in terms of their major corporate goals, meanwhile, OBP measures on a daily or weekly basis the everyday running of the organization [9]. To be consistent with the context of the study, this research divides the business performance into five dimensions as follows; 1) asset performance, 2) profit performance, 3) debts performance, 4) marketing performance, 5) employee performance, which has been adapted following the concept of Goyal [13].

This section presents the link between organizational dynamic capabilities, innovation, and business performance. Giniuniene and Jurksiene [16] investigated "Dynamic Capabilities, Innovation and Organizational Learning: Interrelations and Impact on Firm Performance" and they showed how this can positively influence the firm performance and help the enterprise to sustain competitive advantage. Margaret and Rachel [18] investigated "Developing dynamic capabilities for learning and internationalization: A case study of diversification in an SME". This study examined the development of two specific sets of dynamic capabilities, for learning and diversification, in an SME, triggered by strategic decision-making behaviors. Building on this, we develop a conceptual framework of the interrelated concepts and relationships that led to the development of dynamic capabilities. Innovation increases the competitiveness of countries, particular sectors of the economy, or enterprises. This approach contributes to maintaining profitability, gaining a competitive advantage, and the long-run functioning of a company. Recent research has shown empirical evidence of the relationship between organizational dynamic capabilities, innovation, and business performance.

CONCEPTUAL MODEL AND HYPOTHESES

The research conceptual framework is composed of independent variables (organizational factors, organizational dynamic capabilities), mediator variable (innovation), and dependent variable (business performance); the details are reported in Figure 1.

Figure 1
A conceptual model of research



The research hypotheses are as follows.

H_1: The organizational dynamic capabilities, innovation, and business performance of SMEs are different when classified by organizational factors.

H_2: The organizational dynamic capabilities have positive influence on business performance thought innovation.

The focus target population includes SMEs entrepreneurs of Udon Thani province in Thailand, for a total of 1,037 enterprises. A sample was calculated according to the formula of Taro Yamane [1], and 400 samples were selected by proportional sampling and simple random sampling. Reliability testing was calculated by Cronbach's alpha [2] coefficient values as follows; 0.915 of organizational dynamic capability, 0.945 of innovation and 0.864 of business performance. The statistics used for data analysis were frequency, percentage, mean, and standard deviation. The hypothesis has been tested by F-test (One Way ANOVA), Pearson product coefficient correlation, and Regression analysis.

RESULTS

The level of organizational dynamic capabilities of SMEs in Udon Thani province was at a high level $\overline{X}$ = 3.68, when classified also by opportunity search, resource acquisition, and organizational structure, this achieved $\overline{X}$ = 3.71, $\overline{X}$ = 3.69, $\overline{X}$ = 3.63 respectively. The level of innovation was at high level $\overline{X}$ = 3.62, when classified by sub-elements found that the mean of product innovation, process innovation, organizational innovation and marketing innovation was at $\overline{X}$ = 3.62, $\overline{X}$ = 3.57, $\overline{X}$ = 3.59 and $\overline{X}$= 3.70 respectively. The business performance level was high as well, with a mean of $\overline{X}$ = 3.64.

The hypothesis testing results were as follows; H_1: The organizational dynamic capabilities, innovation, and business performance of SMEs are different when classified by organizational factors. The researchers were used F-test (one-way ANOVA) to prove the hypothesis

Table 1
The organizational dynamic capabilities, innovation, and business performance of SMEs when classified by customer types

Customer types	Organizational Dynamic Capabilities			
	$\bar{X}$	S.D.	F	Sig
Provincial	3.66	0.52	4.432	.01**
National	3.85	0.49		
International	2.75	-		
Customer types	**Innovation**			
	$\bar{X}$	S.D.	F	Sig
Provincial	3.61	0.47	1.793	.17
National	3.71	0.43		
International	3.05	-		
Customer types	**Business Performance**			
	$\bar{X}$	S.D.	F	Sig
Provincial	3.63	0.49	3.274	.04**
National	3.71	0.44		
International	2.53	-		

There was only statistical significant at 0.05 levels different of organizational dynamic capabilities and business performance when classified by customer types. SMEs with international customer had lower organizational dynamic capabilities and innovation than others customer types.

The hypotheses were used regression analysis; hence the symbols used to analyze in this research were as follows; ODC: organizational dynamic capabilities, INO: Innovation, BPM: Business performance.

Table 2
Correlation analysis between variables

	ODC	INO	BPM
ODC	1		
INO	.79**	1	
BPM	.74**	.73**	1

Hair et al. [12] described the relationship between the independent variables must be less than 0.80, which is more than 0.80 may cause of Multicollinearity. This research found the relationship between the independent variables; the highest value was 0.79, it was not exceed 0.80. Multicollinearity problem was not found; therefore it could be tested by using regression analysis to the next.

H_2: The organizational dynamic capabilities have positive influence on business performance thought innovation.

Table 3
The influence of organizational dynamic capabilities on innovation

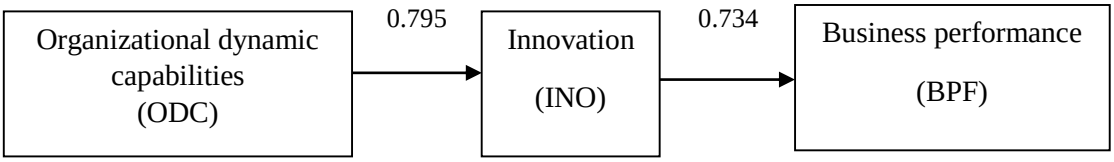
Independent Variable	Standardize Coefficients (β)	t	Sig.
ODC	.795	26.14	0.00**
ΔR^2 = .632, SEE = 0.31, F = 683.76, Sig. of F = .00**			

Table 4
The influence of innovation on business performance

Independent Variable	Standardize Coefficients (β)	t	Sig.
INO	.734	21.54	.00**
ΔR^2 = .542, SEE = .32, F = 467, Sig. of F = .00**			

The hypotheses testing found that the organizational dynamic capabilities can explain the variation of innovation up to 63.20% (Adjusted R-Square 0.632) at 0.05 significant levels. The organizational dynamic capabilities had statistically significant direct influenced on innovation with standardized coefficients (β) of 0.795. The innovation can explain the variation of business performance up to 54.20% (Adjusted R-Square 0.542) at 0.05 significant levels. The innovation had statistically significant direct influenced on business performance with standardized coefficients (β) of 0.734.

Figure 2
The organizational dynamic capabilities influence on business performance thought innovation



CONCLUSIONS

The research findings were revealing; the level of the SMEs organization dynamic capabilities, innovation, and business performance was high level. The organizational dynamic capabilities, innovation, and business performance of SMEs was not different when classified by organizational factors in the aspect of types of firm, number of employees, duration of firm, there was only different in organizational dynamic capabilities and business performance when classified by customer type by SMEs with international customer had lower than other types. In addition, to test the influence of organizational capabilities and innovation on business performance; the results reveal that the organizational dynamic capabilities had high positive influence on innovation, and innovation had high positive influence on business performance. Furthermore, the findings are consistent with the research finding of Twaliwi and Isaac [21]. Under changing environment SMEs need to develop resources to acquire the ability to continue to be ready for future challenges. In general, entrepreneurs should anticipate changes in various environments and seeking for new opportunities to meet the needs of customers, which is essential for business operations in the Thailand 4.0 including the acquisition of effective resources, both financial production of products and personnel for operation are essential for the organization. This includes changing of the work plan to respond to the dynamic economy. An appropriate external part will help to improve the performance as well. Therefore, it is necessary to develop dynamic capabilities in the terms of; organizational restructuring, resource allocation, and network collaboration. This will help the operation of the business to grow and be effective, including increasing innovation, which is an important change to improve the product, process or effectiveness of the business. As well as creating new value for the product or business, this can create innovation in all activities and affect the performance and also help create a competitive advantage for the business sustainably.

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