

The Comparative of Innovation Influence on Organization Performance of Small and Medium Enterprises

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Abstract—This research aims to 1) study the innovation of SMEs 2) study the organization performance of SMEs 3) compare the innovation and the organization performance between types of business and organization's age 4) compare the influence of innovation types on organization performance of SMEs. The samples used in this study were 162 business owners, acquired by multi-stage sampling. The statistics used for data analysis were frequency, percentage, mean and standard deviation, t-test, F-test (One Way ANOVA) and multiple regressions were used for hypothesis testing. The research results were found as follow: there were different in innovation and organization performance between businesses types and organization age of SMEs. The innovation had statistically significant positive influence, by the organizational innovation had the most influence on organization performance.

Index Terms—Innovation, organization performance, small and medium enterprises.

I. INTRODUCTION

A. Background

The Thai small and medium-sized enterprises (SMEs) in the year 2015 found that GDP of small and medium-sized enterprises (SMEs) in the year 2015 is worth 5,212,004 million baht accounted for 39.6 percent of GDP, including the separate SMEs 27.8 percent and medium-sized enterprises 11.8 percent, respectively, it grew only 0.2 percent, decelerated from a 3.5 percent expansion in the previous year. From the above reasons, the SMEs need to adapt in order to survive in the context of more intense competition. The empirical evidences from research finding showed that innovation is a key success for increasing the organization performance of the SMEs. In addition to the evidence from many researchers found the innovation factors such as process innovation, market innovation, and organization innovation were an important antecedents that linked to the emergence of the organization performance. From the reasons above were the origins of this research.

B. Objectives

This paper examines 4 objectives as follows:

- 1) To study the innovation of SMEs in the northeastern of Thailand.
- 2) To study the organization performance of SMEs in the

northeastern of Thailand.

- 3) To compare the innovation and the organization performance between types of business and organization's age.

- 4) To compare the influence of innovation on organization performance of SMEs.

II. LITERATURE REVIEW

A. Innovation

Innovation has a role in the highly competitive of the business organization. Scholars have paid attention to the study analyzed the causes of the emergence of innovation. The scholars were explain the definitions of innovation as follow, Drucker (1985) [1] defined innovation as the process of equipping in new, improved capabilities or increased utility. Oslo manual 2005 [2] 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. The innovations were categorized in many types for example product innovation, process innovation, market innovation, and organization innovation. OCDC (2005) [2] product innovation a definition was a product innovation is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics. Product innovations can utilize new knowledge or technologies, or can be based on new uses or combinations of existing knowledge or technologies. The second type of innovation is process innovation, process innovation definitions were as follow: Bogers (2009) [3] process innovations are defined as new or improved tools, materials, equipments and other technologies that directly affect how the innovating firm produces the goods that it sells on the market. This includes significant changes in techniques, equipment and/or software. The third type of innovation is market innovation, the scholars define as follow: Johne (2006) [4] market innovations defined as improving the mix of target markets and how these are served provides a powerful focus for identifying new business opportunities. Examples from the field of financial services illustrate how skilful market innovation can serve to grow a business as well as to safeguard it from attacks by competitors. OECD (2015) [5] market innovations are defined as a new marketing method involving significant changes in product

Manuscript received November 25, 2016; revised December 26, 2016.

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design or packaging, product placement, product promotion or pricing. The fourth type of innovation is organization innovation, but the existing literature on organizational innovation is diverse and scattered. There is no consensus on a definition of the term “organizational innovation”, which remains ambiguous [6] (Lam, 2005). The definitions are as follow: Armbruster *et al.* (2008) [7] organization innovations are defined as structural organizational innovations and procedural organizational innovations. Structural organizational innovations influence, change and improve responsibilities, accountability, command lines and information flows as well as the number of hierarchical levels, the divisional structure of functions, or the separation between line and support functions. Such structural organizational innovations include, for instance, the change from an organizational structure of functions, for example product development, production, human resources, into product or customer-oriented lines, segments, divisions or business units. Procedural organizational innovations affect the routines, processes and operations of a company. Thus, these innovations change or implement new procedures and processes within the company, such as simultaneous engineering or zero buffer rules. They may influence the speed and flexibility of production (e.g., teamwork, just-in-time concepts) or the quality of production (e.g., continuous improvement process, quality circles). OECD (2008) [8] an organizational innovation is the implementation of a new organizational method in the firm’s business practices, workplace organization or external relations. Organizational innovations can be intended to increase a firm’s performance by reducing administrative costs or transaction costs, improving workplace satisfaction (and thus labor productivity), gaining access to non-tradable assets (such as non-codified external knowledge) or reducing costs of supplies. Little (2012) [9] innovation composed of product innovation, service innovation, process innovation, and business model innovation. OECD (2015) [5] organization innovations are defined as a new organizational method in business practices, workplace organization or external relations. From the literature review and appropriate with the context of SMEs in the study area, this investigation defines the boundaries types of innovation in 3 aspects: 1) process innovation 2) market innovation 3) organization innovation.

B. Organization Performance

The performance is far from being a simple phenomenon; it is a complex and multidimensional concept, Cameron (1986) [10] states that organizational performance is in paradoxical because, from a given perspective, it may indicate a good performance, whereas from another perspective, it might indicate otherwise. Mitchell (2002) [11] Organizational performance can be measured using indicators in Efficiency, Effectiveness, Relevance to Stakeholders and Financial Viability. In this article, we will show how Human Resources has created strategic worth in organizations we know and how the impact of HR on organizational performance has been measured using the four kinds of indicators. Organizational performance itself can be measured in four buckets. 1) Relevance; being the degree to which the organization’s stakeholders think the

company is relevant to their needs. Clients judge the relevance of products or services by buying them, employees by working hard, shareholders by buying and holding shares, and so on. 2) Effectiveness; being the degree to which the organization is successful in achieving its strategy, mission and vision. 3) Efficiency; being how well the organization uses its resources (financial, human, physical, information) 4) Financial viability; being how viable the organizational is not only in the short (the next quarters' results) but also in the long term (how long has the company remained profitable? has the company shown an ability to make good long-term investments?). Ho (2008) [12] the former study of organization performance is concerned with product or service quality, product or service innovation, employee attraction, employee retention, customer satisfaction, management/employee relation and employee relation; the latter is concerned with organizational marketing ability, total growth in sale, and total profitability. Organization performance is measured on four dimensions: relative profitability, return on investment, customer retention, and total sales growth. In the present study, we focus on financial performance and market performance, and organization effectiveness and adopt these three factors for the dimension. This research adapted organization performance form Li-An Ho concept.

C. The Link between Innovation and Organization Performance

After the decade, many research found the empirical evidence the relation between innovation and organization performance. Cainelli *et al.* (2006) [13] examined the interaction between innovation and performance in more detail and concludes that there is a two-way relationship: innovative firms outperform non-innovators, but the most successful companies are also more likely to innovate and devote more resources to innovation. Rosli and Sidek (2013) [14] at the firm level, intense competition under the global economic framework requires small and medium enterprises to reconsider their competitive position vis-à-vis their rivals, amongst others, through innovation. This justifies why innovation, in the last two decades, becomes a centre stage in small business literature, reports and government policy. Their research findings confirmed the hypotheses that product innovation and process innovation influenced firm performance significantly, where the impact of the former was stronger than the latter. Besides consolidating the existing theory on the importance of innovation for explaining a variation in firm performance, the findings also inform SMEs and policy makers that innovation is a critical factor in today’s entrepreneurial activities. From the empirical evidence of the former research, it can be conclude that the innovation had influence on organization performance.

III. CONCEPTUAL MODEL AND HYPOTHESES

The research was mainly aimed to comparative of innovation influence on organization performance of Small and Medium Enterprise (see Fig. 1). Therefore the research hypotheses are:

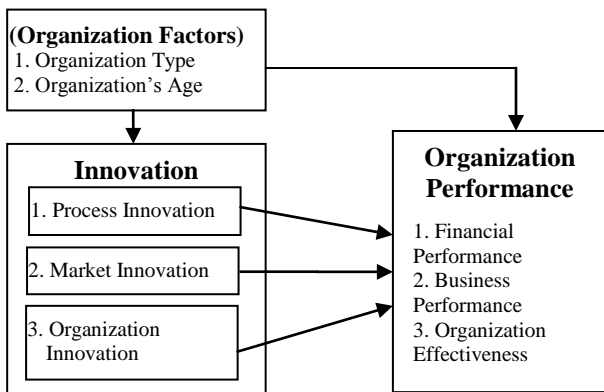


Fig. 1. A conceptual model of the comparative of innovation influence on organization performance of Small and Medium Enterprises.

H₁: the innovation and the organization performance of SMEs categorized by types of business and organization's age are different.

H₂: the process innovation, the market innovation, and the organization innovation had different positive influence on organization performance.

IV. RESEARCH METHODOLOGY

A. Subjects and Sample

Hair *et al.* (2010) [15] suggested that sample sizes should be 100 or greater. Comrey (1973) [16] guided to sample sizes: 100 as poor, 200 as fair, 300 as good, 500 as very good, and 1000 or more as excellent. Thus, this research samples were 162 business owners of Thai SMEs.

Multi-stage sampling is the method of this research; the data collecting questionnaire will be done when the business owner completed the questionnaire. The questionnaires were given in a hard-copy format and a time study was conducted. This is a field study and no artificial setting was created as it natural work environment. Each business owner represents the unit of analysis in this study.

B. Measurement

Two self-report instruments were adopted in the study to assess comparative of innovation influence on organization performance. The instrument used in the study was a questionnaire as follows: 12 questions on innovation adapted from Little (2012), composed of process innovation, market innovation, organization innovation, 4 questions on organization performance adapted from Ho (2008) [12], composed of financial performance, business performance, and organization effectiveness.

C. Methods of Data Analysis

The questionnaires were checked for missing data and for correct completion. Descriptive statistics namely, the mean, frequency, standard deviation were used to describe and summarize the data on locus of control and occupational stress, collected from the respondents. Analytic statistics included the independent t-tests, F-test (One Way ANOVA), Pearson's correlations and multiple regressions. Examination on multicollinearity and its effects will also be done to further validate the regression results.

D. Reliability

It was found from the reliability analysis that the

Cronbach alpha value of the locus of control scale has been found to be 0.87 while the Cronbach alpha value for the occupational stress scale was found to be 0.92. The researches supported that the Cronbach Alpha value greater than 0.6 is acceptable for further analysis (Hair *et al.*, 2010) [15]. Therefore, the data is valid for further analysis.

V. RESULTS

This research was used program for statistical analysis in social science to analysis of the data. The research finding and the hypothesis testing in this study were as follows.

1) Demographic data of the respondents showed that the business types were as follows, the production business 11.1%, the retail-wholesale 69.1%, and the service business 19.8%. From the organization's age, there was less than 5 years 11.7%, 5-10 years 39.5%, 11-15 years 27.8%, 16-20 years 13.0%, and more than 20 years 8.0%.

2) The innovation, the SMEs had highest mean score of process *innovation* at 3.49, market innovation and organization innovation had equal mean score at 3.47.

3) The *organization* performance had mean score at 3.34.

4) The *hypothesis* testing results were found as follow:

H₁: the innovation and the organization performance of SMEs categorized by types of business and organization's age are different.

TABLE I: THE COMPARE DIFFERENT OF INNOVATION AND ORGANIZATION PERFORMANCE CATEGORIZE BY ORGANIZATION TYPES AND ORGANIZATION'S AGE

		Mean	S.D.	F	Sig.	
Innovation	Organization Types					
	Production	3.84	.41	8.421	.000**	
	retail-wholesale	3.40	.47			
	Service	3.54	.29			
		Organization's Age				
	Below 5 years	3.82	.43	4.947	.001**	
	5-10 years	3.39	.41			
	11-15 years	3.56	.50			
	16-20 years	3.36	.35			
More than 20 years	3.28	.37				
Organization Performance	Organization Type					
	Production	3.62	.47	5.632	.004*	
	retail-wholesale	3.28	.41			
	Service	3.41	.41			
		Organization's Age				
	Below 5 years	3.52	.45	2.737	.031*	
	5-10 years	3.30	.41			
	11-15 years	3.43	.45			
	16-20 years	3.28	.41			
	More than 20 years	3.09	.26			

It was found that there was statistically significant of 0.05 of the innovation different between business types and organization's age, by production business had the highest mean score and the retail-wholesale had the lowest mean score. The innovation of less than 5 years organizations age group had the highest mean score, and the more than 20 years organization age group had the lowest mean score of innovation. The comparative of organization performance the results shown as follow, it had difference between business types and organization's age, by production business had the highest mean score, the retail-wholesale

had the lowest mean score. The organization performance of less than 5 years organizations age group had the highest mean score, and the more than 20 years organization age group had the lowest mean score of organization performance (see Table I).

H₂: The process innovation, the market innovation, and the organization innovation had different positive influence on organization performance.

To study the influence of research variables compose with process innovation, market innovation, and organization innovation on organizational performance were used Pearson's Product Moment Correlation Coefficient to determine the relationship of the independent variables, and multiple regression analysis to study. The symbols used to analyze were as follows.

- INO1 Represent Process Innovation
- INO2 Represent Market Innovation
- INO3 Represent Organization Innovation
- OPF Represent Organization Performance

TABLE II: CORRELATION ANALYSIS BETWEEN INDEPENDENT VARIABLES

	INO1	INO2	INO3	OPF
Mean	3.49	3.47	3.47	3.34
S.D.	.46	.59	.51	.43
INO1	1			
INO2	.639**	1		
INO3	.510**	.713**	1	
OPF	.562**	.656**	.699**	1

Table II showed that the relationship between the variables that are related not exceed 0.80, Hair *et al.* (2010) [15] described the relationship between the 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 0.713, it was not exceed 0.80. Multicollinearity problem was not found. Therefore it can be tested by using Multiple Regression to the next analysis.

The research equations to predict the innovation were as follows.

$$OPF = \beta_1INO1 + \beta_2INO2 + \beta_3INO3$$

The equation to analyze the influence of the innovation types on organization performance was as follows.

$$OPF = .200INO1 + .209INO2 + .448INO3$$

(2.913) (2.477) (5.936)

Equation can be showed in the form of diagram as Fig. 2.

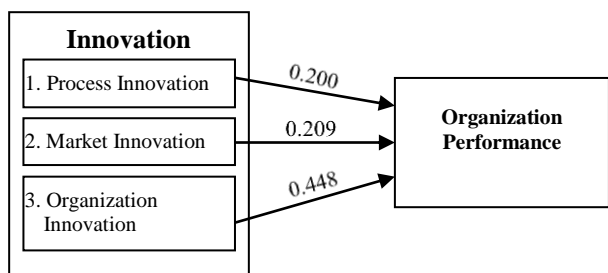


Fig. 2. A multiple regression of the influence of innovation types on organization performance.

The equation of the model testing, the innovation can explain the variation of organization performance 56.3%

(R-square= .563), it was found that the organization innovation was the statistically significant highest positive influence on organization performance standardized coefficients (β) .448, market innovation and process innovation had standardized coefficients (β) .209, and (β) .200 respectively.

VI. CONCLUSION

Therefore, it can be concluded that there were different in innovation and organization performance between businesses types and organization age of SMEs. The organization innovation had statistically significant positive influence on organization performance, compliance with the former study such as Cainelli *et al.* (2006) [13] Garc á-Morales, *et al.* (2012) [17] and Rosli and Sidek (2013) [14]. Policy recommendations, the SMEs owner should be promoted to create an innovation, particularly in organization innovation complementary as follows, 1) always analysis of the external environment such as customer demand and business competitors 2) formulate strategy, vision and mission accordance with its dynamic environment 3) regularly check the efficiency of resource usages. Furthermore the SMEs owners should continuous improve in market and process innovations such as develop their marketing mix strategy, and as well as reducing many steps of customer service. For the future research, form the R-square of the research model, its show that there are an others antecedent variable can affecting to the organization performance that future research should be study more, such as organization culture, organization climate, human resource management strategic, entrepreneurial.

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