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Innovation- Performance Intergrated Model: A Research in Vietnam

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ABSTRACT: Innovation is define as a new idea, creative thought, or new imagination in the form of equipment or methods. Thus there are many types of innovation that are explored in studies. In this paper, the innovation- performance intergrated model was proposed by PLS- SEM althorigm. The author surveyd 32 employees in manufacturing enterprises in Vietnam to conduct this model, and explaned the relationship among four types of innovation such as Process/Technology innovation, Organizational innovation, Product innovation, and Marketing innovation. Besides, the models also investigate the impact of innovation on performance in Vietnam.

Keywords - *Process /Technology innovation, Organizational innovation, Product innovation, Marketing innovation, Performance.*

1. INTRODUCTION

Enterprises are now facing many challenges as the globalization changes drastically in the industrial revolution 4.0. To improve their competitive position, businesses need to constantly innovate. In the world, research not only focuses on product innovation, technological process innovation but also interested in organizational innovation, marketing innovation to business performance [1][2][3][4][5] . However, in Vietnam, especially in small and medium enterprises, innovation is a challenge. Researches in Vietnam today mostly focus on technology innovation and product innovation [6]. Researchers have not paid much attention to the concept of organizational innovation and marketing innovation. And most of the research is only for statistics and experts' judgment, but there is not a model to test specific hypotheses. Except for a few studies, it tested that technological innovation affects labor productivity [7]. There are many authors in Vietnam who have researched on performance results. However, most of these studies have ignored how innovation affects performance. Therefore, in this topic, the author chose the topic "Innovation- Performance Intergrated Model: A Research in Vietnam" to test the relationship between types of innovation together and the impact of innovation on business performance.

2. LITERATURE REVIEW

In the context related to the topic, the author summarizes a number of studies related to the question of how the company's operating results innovate such as revenue, profit, and costs.

According to [1] collected data from 7302 companies in the European region to test the relationship of technology use via the internet, different types of innovation and business performance. Research results show that all types of product innovation and process innovation (including e-commerce related products and traditional products) have a positive effect on sales and workforce growth. Also in 2008, another study studied

small and medium sized companies in Portugal on the relationship between TQM (Total Quality Management), customer orientation and innovation (innovation) comes into business activity. The author concludes that most of the components that make up TQM affect customer orientation and business performance. Meanwhile TQM does not affect innovation. However, innovation affects business performance [2].

Next, Mile Terziovski studied 600 SMEs in Australia and concluded that formal structure and innovation strategy are key factors influencing business performance [3]. Cheng et al. studied the relationship between innovation (process innovation, product innovation, organizational innovation) to firm performance in 121 firms in Taiwan. Research has confirmed that organizational innovation has the most positive impact on corporate performance. Meanwhile process innovation and product innovation influence organizational innovation, and organizational innovation affects business performance [4]. Recently, the research studied the relationship between organizational characteristic (organizational characteristic) and firm's innovation and corporate performance. The authors have studied 421 production and service companies in Slovenian. The results show that innovation has a positive effect on business performance [5].

In general, studies were conducted at different times in many countries, but the results were quite similar in tes Researches in Vietnam today mostly focus on technology innovation and product innovation; Researchers have not paid much attention to the concept of organizational innovation and marketing innovation ting the relationship between innovation (innovation) to firm performance [6][7].

Elisa Calza et al. studied the effects of standards and innovation on the productivity of SMEs in Vietnam showed that technological innovation (product and process) and other related variables. In terms of technological capabilities, international standards for higher productivity [7]. SMEs must be considered as the center of the technological innovation process. In Vietnam, SMEs account for about 97% of the total number of enterprises in the country, play an important role in creating jobs, improving workers' incomes and mobilizing resources for economic development. However, state funds supporting technology innovation for SMEs are not popular in developing countries like Vietnam [8].

Currently, research on factors affecting the performance of enterprises in Vietnam is limited. Most of the studies are only local in a province or city with a small sample of enterprises. Therefore, the representativeness of the study is not high. On the other hand, these studies mostly ignore the impact of the Innovation factor on business performance. One of the few studies on innovation to business performance of Vietnamese enterprises is conducted by Quan Minh Nhut. The author has surveyed primary information from 55 randomly selected agricultural enterprises, representing agricultural enterprises in Ben Tre province. The study concludes investment in science and technology for the business performance of the enterprise, the results of differential analysis show that there are 4 statistically significant factors affecting the difference in profitability of the business. Enterprises are: total revenue, investment capital for science and technology application, type of enterprise and market expansion situation [9]. However, there may be limited access to data, so the author has not found any research using quantitative methods of the relationship model between technology innovation, product innovation, organizational innovation, and new marketing and business results in Vietnamese enterprises. To compensate for that limitation, this topic aims to quantify the relationship model between technology innovation, product innovation, organizational innovation, marketing innovation and business performance through data analysis. about Vietnamese enterprises to have a more objective and specific view.

Based on Cheng's model (2014), with the addition of "Marketing innovation" from the research of Murat Atalay et al. (2013), the authors proposes the research model as follows:

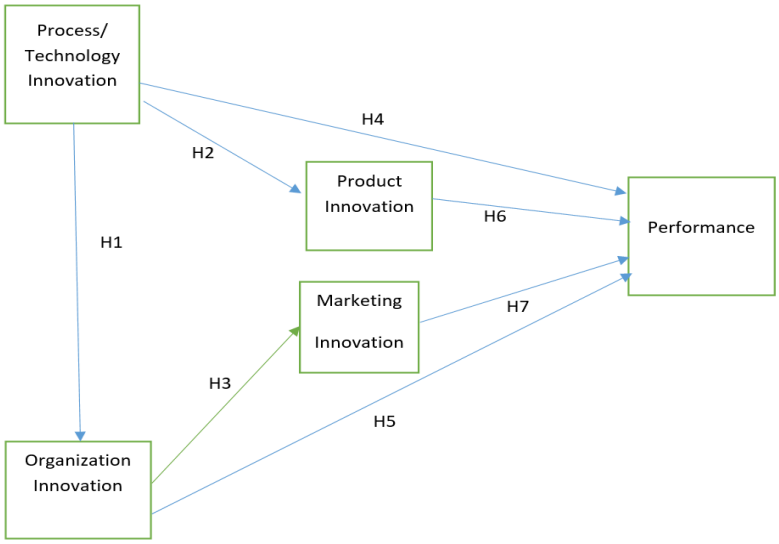

Fig. 1: Propose research model

In which the hypotheses are raised are:

H1: Organizational innovation has a positive effect on Process / technology innovation

H2: Process / technology innovation has a positive effect on product innovation

H3: Organizational innovation has a positive effect on marketing innovation

H4: Process / technology innovation has a positive effect on business performance

H5: Organizational innovation has a positive effect on business performance

H6: Product innovation has a positive impact on business performance

H7: Marketing innovation has a positive impact on business performance

3. METHODOLOGY

This study use quantitative method to re-test the scales in the research model through the data collected from the survey questionnaire.

The scales are built and developed from theoretical bases and research models. Variables in the research model using the 7-level Likert scale (from 1: completely disagree to 7: totally agree).

Tab. 1: Coding and explaning vriables in model

	Code	Content
	TECH_INNO	**Process / Technology innovation**
1	TI1	Your company regularly innovates the production process
2	TI2	Your company often innovates technology in production
3	TI3	Your company regularly innovates machinery in production
	OI	**Organizational innovation**
4	OI1	The company has applied standards for management systems
5	OI2	The managers of your company regularly gives instructions on innovation.
	PRO-INNO	**Product innovation**
6	PI1	Your company regularly researches and develops new products.
7	PI2	Your company regularly introduces new products to customers.
8	PI3	Your company regularly improves existing products.
	MAR_INNO	**Marketing innovation**
9	MI1	Your company often innovates the way of advertising products
10	MI2	Your company has diversified product marketing forms
11	MI3	Your company often introduces products on e-commerce channels.
	PER	**Business performance**

		In the last 3 years, you evaluate your company achieved good performance in terms of:
12	PER1	Return on investment
13	PER2	Profit
14	PER3	Market share
15	PER4	Sales

After creating a complete survey questionnaire using the Google form, the authors conducted a survey using a completely designed form to survey subjects randomly in Ho Chi Minh City, in Vietnam. Data was analyzed by SMART PLS software.

4. RESULTS

The results indicate a reasonable reliability as Cronbach's alpha and composite reliability are higher than the benchmark of 0.7. The acceptable convergent validity is recognised because all AVE (Average Variance Extracted) values exceed 50%, which is the case for the present data (see Table 2). We therefore conclude that the discriminant validity is established for our research.

Tab. 2: The results of reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
MI_	0.967	0.967	0.978	0.938
OI	0.915	0.915	0.959	0.921
PER	0.973	0.973	0.980	0.926
PI	0.947	0.947	0.966	0.904
TI	0.950	0.951	0.968	0.909

The results of PLS agorithm were showed in the figure 2. The Standardized Root Mean Square Residual (SRMR) is defined as the difference between the observed correlation and the model implied correlation matrix. Thus, it allows assessing the average magnitude of the discrepancies between observed and expected correlations as an absolute measure of model fit criterion. The SRMR of this model equal by 0.026 (<0.08), thus this model fit criterion.

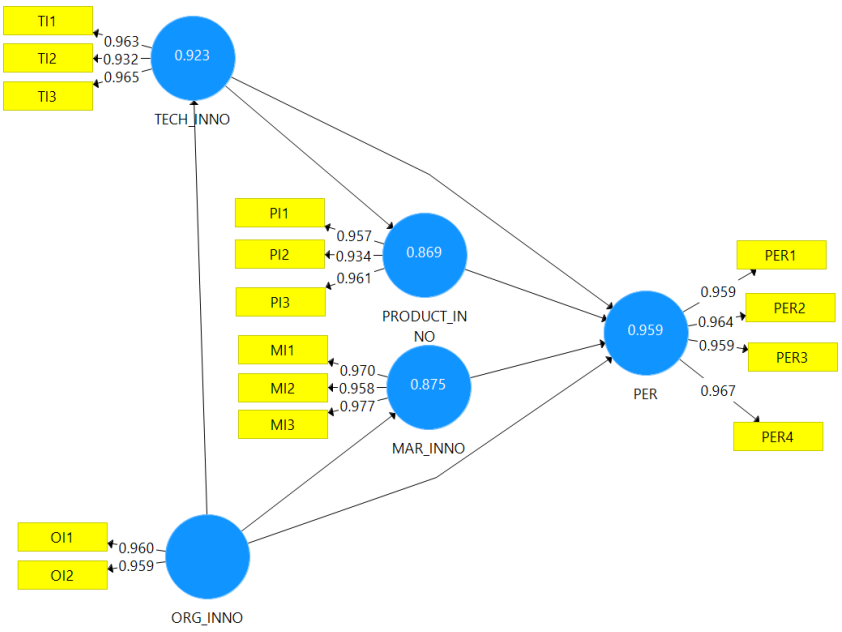

Fig. 2: PLS agorithm results

The analysed results of the direct influences (see fig 3) show that organization innovation (p-value < 0.05) significantly and positively influences technology/process innovation and marketing innovation. Beside, technology/process innovation has positive affect on product innovation, and marketing innovation has positive impact on performance. Thus H1, H2, H3, H7 are accepted.

However, but o technology/process innovation, product innovation, and organization innovation (p-value >0.05) do not affect performance, thus rejecting H4, H5, and H6.

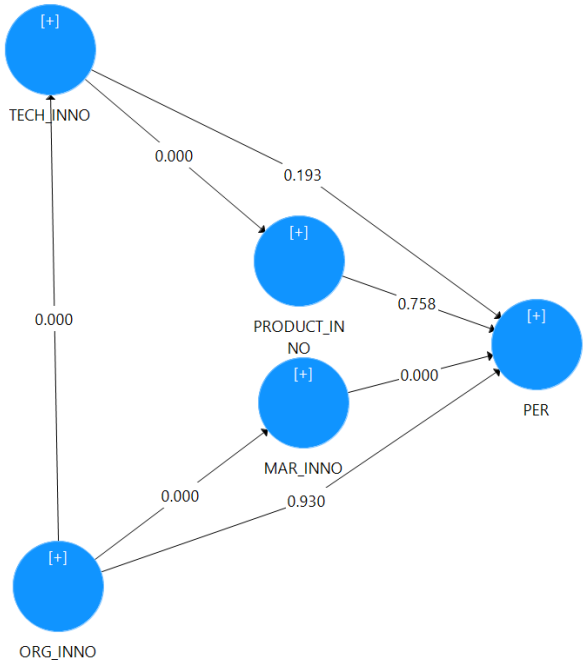

Fig. 3: The rults of regression analysis

5. CONCLUSION

The study analyses the relationship between four types of innovations, including Process / Technology innovation, Organizational innovation, Product innovation, and Marketing innovation together in mixed model. The results show that there are the significant and positive impact of organization innovation on technology/process innovation and marketing innovation. Also, technology/process innovation has positive affect on product innovation, and marketing innovation has positive impact on performance. The innovation-performance intergrate model is provide scholars and practitionor with a framework to deeply analyse the the relationship between innovation and performance.

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