



*Research Article*

# SMES Are Embracing Innovation for Business Performance

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## Abstract

SMEs are embracing innovation in enhancing their business competitiveness. Innovation which is vital for a firm competitiveness is embedded in the organizational structures, processes, products and services within a firm. This empirical study has investigated the relationships between the products, process, marketing and organizational innovations of SMEs with its innovative, operation and financial performances. The main contribution of this study is the comprehensive analyses and testing of innovation-performance relationship based on empirical data to uncover the effects of the different types of innovations on firm performance. It is also expected to help the SMEs in the understanding of the key variables which influence their business and financial performance grounded base on resource-based theory. A total of 43 duly completed forms out of the total of 381 questionnaire survey forms that were e-mailed to owners or managers of the SMEs in the state of Johor, Malaysia were analyzed using the SPSS software package. It was found that the firm innovation has a significant and positive relationship with financial, operation and innovative performances. This is with the exception of marketing innovation which indicated no significant relationship with financial performance. Firm innovation explained a total of 39.4% of financial performance, 48.4% of operational performance and 57.5% of innovative performance. Another important point is firm innovation which is strongly and positively related to firm innovative performance. By focusing on organizational innovation, SMEs are able to enhance their firm financial performance.

**Keywords:** Innovation, firm performance, SMEs

## Introduction

Malaysia economies are dominated by a large proportion of small and medium enterprises (SMEs). According to Census Report on SMEs 2011, there was a total of 645,136 SMEs operating their businesses in Malaysia representing 97.3% of the total of business establishments. The SMEs sectors are comprised of services sector (90 percent), manufacturing sector (5.9 percent), construction sector (3 percent), agriculture (1 percent) and mining and quarrying (0.1 percent) (Wayne Lim, 2011). Most of the SME establishments in Malaysia are based in Selangor (19.5%) and Kuala Lumpur (13.1%), followed by Johor (10.7%), Perak (9.3%) and Sarawak (6.8%). In 2014, SMEs contributed 65% of total employment and 17.8% of total exports. However, this contribution to the overall economy is relatively small when compared with the advanced and other high middle income countries (Department of Statistics Malaysia (DOSM) and SME Corp. Malaysia, 2014).

The early concept of the innovation of economic development and entrepreneurship has been popularized by Joseph Schumpeter, a German economist. Innovation, in his view, comprises the elements of creativity, research and development (R&D), new processes, new products or services and advance in technologies (Lumpkin and Dess, 2001). Normally a firm's ability is evaluated based on its performance (Bonn, 2000). Firm performance is the outcome achieved in meeting internal and external goals of a firm (Lin et al., 2008).

This study is to investigate the relationship between the products, process, marketing and organizational innovations of SMEs with its innovative performance, operational performance and financial performance. The main contribution of this study is the comprehensive testing of innovation-performance analysis based on empirical data to uncover the effects of the different types of innovation on firm performance and the relationships among these variables. It is also expected to help

the SMEs in the understanding of the key variables which influence their business and financial performance.

From the earliest work by Gunday et al. (2011) up to the recent work by Saunila (2014), the relationship between the innovation of firms and its performance is still debatable. Besides that, the nature of such research work is very important to the economy of a country. The total number of SMEs in Malaysia is estimated to grow to 1 million in 2012, accounting for up to 99.2% of total business establishments (SME Corp. Malaysia, 2014). Firms should be innovative irrespective of their firm size or sector in order to compete and survive in the market (Elci and Karatayli, 2009). Innovation contributes significantly to economic growth (Ahmed and Shepherd, 2010). Gunday et al. (2011), and Saunila and Ukko (2012, 2013) found that innovation and business performance are positively related. However, Saunila (2014) has reported a non-significant direct relationship of innovation with firm performance. Literature revealed that study in this area has been fragmented, lacks comprehensive reviews and findings were considered as inconsistent. Consequently, this research has been carried out to investigate the relationship between the SMEs innovation and its performance. Specifically, the research objectives are to investigate the level of SMEs firm innovation, the level of SMEs performance in Malaysia, and to determine whether SMEs innovation is related to the financial, operational and innovative performances.

## Literature Review

According to SME International Malaysia (2013), the success of SMEs in some advanced economies is a fundamental component of their economies, comprising of over 98% of the total establishments and contributing to over 65% of employment as well as over 50% of the gross domestic product. Although, the numbers might be lower in Malaysia, SMEs have the potential to contribute substantially to the economy

and can provide a strong foundation for the growth of new industries as well as strengthening the existing ones for Malaysia's future development. Developing stronger SMEs requires major changes in the manufacturing sector, as SMEs make up over 90% of the Malaysia's manufacturing sector.

Innovation at firm level refers to a firm's receptivity and propensity to adopt new ideas that lead to the development and the launch of new products (Rubera and Kirca, 2012). The use of terms such as "new" or "improved" retains a degree of subjectivity in the notion of innovation. What is new to one firm is not necessarily new to another, therefore it is possible that the innovation in two different firms is not identical. This observation emphasizes the degree of complexity associated with the term. Product innovation has been defined as the creation of a new product from new materials (totally new product) or the alteration of existing products to meet customer satisfaction (improved version of existing products) (Gopalakrishnan and Damanpour, 1997; Langley et al., 2005). Process innovation is the implementation of a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software (e.g. installation of new or improved manufacturing technology, such as automation equipment or real-time sensors that can adjust processes, computer-aided product development) (OECD and Eurostat, 2005).

Organizational innovation is the implementation of a new organizational method in the firm's business practices, workplace organization or external relations (Gunday et al., 2011). Organizational innovations have a tendency to increase firm performance by reducing administrative and 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 (OECD Oslo Manual, 2005).

Market innovation deals with the market mix and market selection in order to meet a customer's buying preference (Johnes, 1999). Continual market innovation needs to be done by a firm because of state-of-the-art marketing tools, particularly through the Internet, which makes it possible for other competitors to reach potential customers across the globe at the speed of light. Normally a firm's ability is evaluated based on its performance (Bonn, 2000). According to Tangen (2005), performance is a term for all concepts that consider the success of a firm and its activities. In this research, performance refers to the outcomes. A firm's performance is divided into three main areas: innovative performance, operational performance and financial performance. Financial performances refer to factors of sales value, sales growth and gross profit or profitability while; business performance can be classified in terms of financial and non-financial performance (Li, 2000). Particularly, four different performance dimensions are employed in the literature to represent firm performance (Hagedoorn and Cloudt, 2003; Yilmaz et al., 2005). These dimensions are innovative performance, production performance, market performance and financial performance.

The operational performance can also be referred to as productivity performance (Schreyer and Pilat, 2001). Productivity is commonly defined as a ratio of a volume measure of output to a volume measure of input use (Schreyer and Pilat, 2001) or in other words, how much of output which is obtained from a given set of inputs (Syverson, 2010). Productivity is a technical concept which measures the efficiency from the used factors of production. Higher productivity is likely to improve profitability and enhance a firm's competitiveness relative to its rivals. Innovative performance is the combination of overall organizational achievements as a result of renewal and improvement efforts done via considering the various aspects of a firm innovativeness. Therefore, innovative performance is a composite construct (Hagedoorn and Cloudt, 2003) based on various performance indicators

pertaining, for instance, to the new patents, new product announcements, new projects, new processes, and new organizational arrangements. Innovations can actually enhance the firm performance in several aspects.

Innovation has a considerable impact on corporate performance by producing an improved market position that conveys competitive advantage and superior performance (Walker, 2004). Studies focusing on the innovation-performance relationship provide a positive appraisal of higher innovativeness resulting in increased corporate performance (Hult and Ketchen, 2001; Du and Farley, 2001; Calantone et al., 2002; Garg et al., 2003; Wu et al., 2003). But these research works are generally conceptual in nature and/or focus only on a single type of innovation rather than considering all the four different types of innovation together to investigate its impact on the firm performance. Process and product innovations are the most common innovation types examined. The studies by Marcus (1988), Ittner and Larcker (1997), Whittington et al., (1999), Olson and Schwab (2000), Knott (2001) and Baer and Frese (2003) focus merely on process innovations while studies of Atuahene-Gima (1996), Subramanian and Nilakanta (1996), Han et al., (1998) and Li and Atuahene-Gima (2001) reported on product innovations. Many of these research studies embrace more or less a positive association between innovations and firm performance, but there are also some studies indicating a negative link or no link at all (Capon et al., 1990; Chandler and Hanks, 1994, Subramanian and Nilakanta, 1996).

### Methodology

Firm performance has been central to strategy research through resource-based (RVB) approach. The key premise to RVB is how a firm competes basing on the resources capabilities and resources to sustain competitive advantage (Barney, 1986; Spanos and Lioukas, 2001; Peteraf and Bergen, 2003). Thus, the underlying approach used to formulate the research

framework is based on RBV. Innovation which comprises of product innovation, process innovation, organizational innovation and marketing innovation is the independent variable while the firm performance measures comprising of the financial, operational, and innovative performances are the dependent variable.

The hypotheses that have been formulated for this research work are as follow:

H1: SMEs innovation is related to firm financial performance in SMEs.

H1A: Product innovation is related to firm financial performance in SMEs.

H1B: Process innovation is related to firm financial performance in SMEs.

H1C: Organizational innovation is related to firm financial performance in SMEs.

H1D: Marketing innovation is related to firm financial performance in SMEs.

H2: SMEs innovation is related to firm operational performance in SMEs.

H2A: Product innovation is related to firm operational performance in SMEs.

H2B: Process innovation is related to firm operational performance in SMEs.

H2C: Organizational innovation is related to firm operational performance in SMEs.

H2D: Marketing innovation is related to firm operational performance in SMEs.

H3: SMEs innovation is related to firm innovative performance in SMEs.

H3A: Product innovation is related to firm innovative performance in SMEs.

H3B: Process innovation is related to firm innovative performance in SMEs.

H3C: Organizational innovation is related to firm innovative performance in SMEs.

H3D: Marketing innovation is related to firm operational innovative performance in SMEs.

This is a quantitative research study. There are 68,874 SMEs listed in the SMEs Corp. Malaysia (2013) directory in the state of Johor. The sample size was determined based on Krejcie and Morgan (1970) sampling table. Survey questionnaires were e-mailed to the individual owner, director or manager who are knowledgeable of their respective business representing each SMEs from the total of 381 selected sampled innovative SMEs. Data were collected via email replied from the targeted respondents who are manager or owner of the respective SMEs over a period of 2.5 months. Follow-up phone calls were made to assist in getting the respondent's response.

The questionnaire comprises of three sections. Section A is on general information of the respondents. Section B was divided into a few subsections, which include a) product innovation, b) process innovation, c) organizational innovation, and d) marketing innovation. Section C focuses on SMEs performance with innovative, financial and operational performance and in this section, respondents are required to compare their performance with that of their competitors.

Section A comprises of eight questions where question 1 to question 3 are related to the highest education level of respondents, job position and year of experience in this job. Question 4 to question 8 asked about company background which included the number of employees in this company, company age, the number of years a firm has been in operation, company ownership and type of industry. Section B comprises of four subsections of marketing strategy with a total of 24 questions. Subsection a) consists of 5 questions on product innovation, sub-

section b) consists of 5 questions which are process innovation, subsection c) consists of 9 questions on organizational innovation, and subsection d) consists of 5 questions on marketing innovation. Section C comprises of three sub-sections with a total of 8 questions. Subsection a) consists of 4 questions in financial performance, subsection b) consists of 4 questions on production performance and sub-section c) consists of 4 questions on innovative performance.

#### ***Pilot Study and Profile of Respondents***

Ten respondents were chosen to answer the questionnaire for the purpose of the pilot study. This pilot test is to validate the validity of the measures of the variables as the respective questions of the measures. The research questions were adapted from various previous researchers and reviewed by two experts in the international marketing field. Cronbach's Alpha has been used to test the reliability of the measures. The Cronbach's Alpha result of product innovation is 0.822, process innovation is 0.829, organizational innovation is 0.859, marketing innovation is 0.858, financial performance is 0.772, operational performance is 0.682 and innovation performance is 0.860. The overall reliability Cronbach's Alpha is 0.954. Cronbach's Alpha value of  $\geq 0.60$  for all the variables indicated that all the measures in the questionnaire have good reliability. Thus, all the measures of variables are valid and reliable.

The reliability tests of the actual data collected were again tested using Cronbach's Alpha. This is shown in Table 1. The Cronbach's Alpha for product innovation is 0.704, process innovation is 0.707, organizational innovation is 0.870 and marketing innovation is 0.860. The Cronbach's Alpha for the dependent variable of financial performance is 0.771, operational performance is 0.742 and innovation performance is 0.869. Thus, all the variables are reliable for further analyses.

**Table 1: Reliability test of elements**

No.	Element	No. of Element	Cronbach's Alpha
1.	Product Innovation	5	0.704
2.	Process Innovation	5	0.707
3.	Organizational Innovation	9	0.870
4.	Marketing Innovation	5	0.860
5.	Financial Performance	4	0.771
6.	Operational Performance	4	0.742
7.	Innovation Performance	6	0.869

Table 2 tabulated the profile of respondents and companies background.

**Table 2: Profile of the respondents (N=34)**

No.	Demographic	Categories	Frequency
1.	Education level	Secondary School	15
		Diploma/ Degree	18
		Post Graduate Degree	1
2.	Job position of respondent	Top management /Owners	20
		Managers	14
3.	Year of experience	<5 year	9
		5-<10 year	10
		10-20 year	8
		>20 year	7
4.	Company age	2-<10	10
		10-<20	10
		20-<30	8
		30-40	5
		>40	1
5.	Number of employees	<5 employees	11
		5 - 30 employees	16
		30 - 75 employees	5
		75 - 200 employees	2
6.	Type of sector	Manufacturing	16
		Services	18
7.	Company ownership	Sole Proprietorship	13
		Partnership	8
		Private Limited Company	12
		Others	1

## Findings and Discussion

### *Level of innovation firm among SMEs*

To answer the first research question of what is the level of innovation firm of SMEs in Malaysia, the descriptive statistic method was used. The results of the mean, its standard deviation and the levels of firm innovation for product innovation, process

innovation, organizational innovation, and marketing innovation are tabulated in Table 3. As a summary, the SMEs in Johor are very high in their level of marketing innovation. However, it shows a mixture of very good and good levels of product innovation, process innovation, and organizational innovation. Thus, the objective of determining the level of

innovation firm among SMEs has been determined.

**Table 3: Product, Process, Organizational and Marketing Innovations**

No.	Elements of Product Innovation	Mean	Std. Deviation	Level of Product Innovation
1.	Developing new products with technical specifications and functionalities totally differing from the current ones.	3.706	0.676	Very High
2.	Developing newness for current products leading to improved ease of use for customers and to improved customer satisfaction.	3.9412	0.736	Very High
3.	Developing new products with components and materials totally differing from the current ones.	3.589	0.743	High
4.	Decreasing manufacturing cost in components and materials of current products.	4.029	0.797	Very High
5.	Increasing manufacturing quality in components and materials of current products.	3.882	0.808	Very High
	Overall (Composite from SPSS result)	3.829	0.510	Very High

No.	Elements of Process Innovation	Mean	Std. Deviation	Level of Process Innovation
1.	Determining and eliminating non-value-adding activities in delivery related processes.	3.706	0.760	Very High
2.	Decreasing variable cost and/or increasing delivery speed in delivery related logistics processes.	3.735	0.751	Very High
3.	Increasing output quality in manufacturing processes, techniques, machinery and software.	3.677	0.727	Very High
4.	Decreasing variable cost components in manufacturing processes, techniques, machinery and software.	3.589	0.657	High
5.	Determining and eliminating non-value-adding activities in production processes.	3.647	0.691	High
	Overall (Composite from SPSS result)	3.671	0.487	Very High

No.	Elements of Organizational Innovation	Mean	Std. Deviation	Level of Organizational Innovation
1.	Renewing the organization structure to facilitate teamwork.	3.824	0.673	Very High
2.	Renewing the production and quality management systems.	3.912	0.712	Very High
3.	Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing.	3.6471	0.734	High
4.	Renewing the routines, procedures and processes employed to execute firm activities in an innovative manner.	3.765	0.741	Very High

5.	Renewing the human resources management system.	3.500	0.896	High
6.	Renewing the supply chain management system.	3.735	0.864	Very High
7.	Renewing the organization structure to facilitate project type organization.	3.677	0.684	Very High
8.	Renewing the in-firm management information system and information sharing practice.	3.647	0.73371	High
9.	Renewing the organizational structure to facilitate strategic partnerships and long-term business collaborations.	3.647	0.774	High
	Overall (Composite from SPSS result)	3.706	0.532	Very High

No.	Marketing Innovation	Mean	Std. Deviation	Level of Marketing Innovation
1.	Renewing the product promotion techniques employed for the promotion of the current and/or new products.	4.059	0.694	Very High
2.	Renewing the distribution channels without changing the logistics processes related to the delivery of the product.	3.853	0.784	Very High
3.	Renewing the product pricing techniques employed for the pricing of the current and/or new products.	3.941	0.649	Very High
4.	Renewing the design of the current and/or new products through changes such as in appearance, packaging, shape and volume without changing their basic technical and functional features.	3.824	0.626	Very High
5.	Renewing general marketing management activities.	4.059	0.694	Very High
	Overall (Composite from SPSS result)	3.947	0.553	Very High

Note: Range is based on Likert Scale of 1 to 5 where 1.00-2.33=Low; 2.3-3.66=High and 3.67-5.00 =Very High (Kim-Soon, 2015).

#### ***Level of SMEs performance***

To answer the second research question of what is the level of SMEs performance in Malaysia, the descriptive statistic method was used to test the level of SMEs performance in Malaysia. The results of the mean, standard deviation and levels for financial performance, operational

performance, and innovative performance are tabulated in Table 4. It indicates that SMEs Johor has good level innovation performance. There is a mixture of very good and good levels in financial performance and operational performance. Thus, the objective of determining the level of SMEs performance in Malaysia has been determined.



**Table 4: Financial Performance**

No.	Financial Performance	Mean	Std. Deviation	Level of Financial Performance
1	Return on assets (profit/total assets)	3.735	0.790	Very Good
2.	General profitability of the firm	3.941	0.649	Very Good
3.	Return on sales (profit/total sales)	3.912	0.621	Very Good
4.	Cash flow excluding investments	3.647	0.734	Good
	Overall (Composite from SPSS result)	3.809	0.540	Very Good
No.	Operational Performance	Mean	Std. Deviation	Level of Operational Performance
1	Production (volume) flexibility	3.853	0.610	Very Good
2	Production and delivery speed	3.735	0.666	Very Good
3	Production cost	3.559	0.786	Good
4	Conformance quality	3.647	0.646	Good
	Overall (Composite from SPSS result)	3.699	0.510	Very Good
No.	Innovative Performance	Mean	Std. Deviation	Level of Innovation Performance
1.	Renewing the administrative system and the mindset in line with firm's environment.	3.616	0.697	Good
2.	Innovations introduced for work processes and methods.	3.588	0.657	Good
3.	The quality of new products and services introduced.	3.588	0.743	Good
4.	Number of new product and service projects.	3.529	0.748	Good
6.	Percentage of new products in the existing product portfolio.	3.471	0.896	Good
7.	Number of innovations under intellectual property protection.	3.647	0.774	Good
	Overall (Composite from SPSS result)	3.574	0.588	Good

Note: Range is based on Likert Scale of 1 to 5 where 1.00-2.33=Not Good; 2.3-3.66=Good and 3.67-5.00=Very Good (Kim-Soon, 2015).

### ***Relationship of innovation and SMEs performance in Malaysia***

This section is to answer the third research question of whether there is a relationship between innovation and SMEs performance. The bivariate Pearson correlation analysis was used to determine the relationship of innovation and SMEs performance in terms of financial performance, operational performance and innovation performance. The results of analyses are tabulated in Table 5. It shows that product innovation, process innovation and organizational innovation has a strong positive relationship with

financial performance as the R-value is between the ranges of 0.40 to 0.69. However, marketing innovation with a correlation coefficient of 0.30 is not significantly related to financial performance. On the other hand, all four firm's innovation variables (product innovation, process innovation, organizational innovation and marketing innovation) are significantly related to firm operational performance at a p-value less than 0.01. These four innovation variables show a strong positive relationship with the firm operational performance at the correlation coefficient between the ranges of 0.40 to 0.69. It thus indicates that firm

innovation has a positive relationship with operational performance. It follows that all the firm innovation variables have significant positive relationships with financial performance, operational performance and innovative performance. This is with the exception of marketing innovation which has no significant relationship with financial performance.

### **Normality Test**

The normality test is to fulfill the linear regression assumption of the validity of linear regression analysis where the variables need to be normally distributed. The Kolmogorov-Smirnov Test has been used to test the normality of all the variables. The results of the one-sample Kolmogorov-Smirnov Tests are all not significant, ranging from the value of  $p < 0.076$  to  $p < 0.200$  indicating that all the respective variables are normally distributed.

**Table 5: Correlation of SMEs innovations and the performance variables**

No.	Variable	Product Innovation	Process Innovation	Organizational Innovation	Marketing Innovation
1	Financial Performance	0.489**	0.467**	0.524**	0.300
2	Operational Performance	0.647**	0.454**	0.559**	0.446**
3	Innovative Performance	0.650**	0.602**	0.647**	0.494**

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

### **Hypotheses Testing**

All the hypotheses have been tested with linear regression method and the results are shown in regression Table 6, 7 and 8.

H1: Innovation is related to firm financial performance in SMEs.

To examine this hypothesis, linear regression was used and the result of the independent variables with firm financial performance is shown in Table 6. The R value of 0.628 indicates a strong positive relationship to financial performance with significant F-change at  $p < 0.01$ . The R Square change value of 0.394 means that 39.4% of firm financial performance is being explained by innovation firm. The Durbin Watson value of 2.201 of the model suggests that the result of the regression model is valid. Hence, this result supported the Hypothesis H1 of innovation firm is related to firm financial performance.

H1A: Product innovation is related to firm financial performance in SMEs.

Table 6 shows that Beta value of 0.388 is not significant for the relationship between

product innovation with firm financial performance. Therefore, Hypothesis H1B is not supported.

H1B: Process innovation is related to firm financial performance in SMEs.

Table 6 shows that Beta value of 0.207 is not significant for the relationship between process innovation with firm financial performance. Therefore, Hypothesis H1B is not supported.

H1C: Organizational innovation is related to firm financial performance in SMEs.

Table 6 shows Beta value of 0.417 for the relationship between organizational innovation with firm financial performance is significantly related at  $p < 0.05$ . Hence, Hypothesis H1C is supported.

H1D: Marketing innovation is related to firm financial performance in SMEs.

Table 6 shows that Beta value of -0.370 is not significant for the relationship between marketing innovation to firm financial performance. Therefore, Hypothesis H1D is not supported.

**Table 6: Regression model for independent variables and firm financial performance**

No.	Description	Beta Standardized
	Model Coefficients	
1.	Product Innovation	0.388
2.	Process Innovation	0.207
3.	Organizational Innovation	0.417*
4.	Marketing Innovation	-0.370
	Model Summary	
1.	R	0.628
2.	$R^2$	0.394
3.	Adj. $R^2$	0.310
4.	F Change	4.713**
5.	Durbin-Watson	2.201

\*\*\* p<0.001 level; \*\* p< 0.01 level; \* p< 0.05

H2: Innovation is related to firm operational performance in SMEs.

To examine this hypothesis, linear regression was used and the result of the independent variables with firm operational performance is shown in Table 7. The R value of 0.696 indicates a strong positive relationship to operational performance at p<0.001. The R Square change value of 0.484 means that 48.4% of firm operational performance is being explained by innovation firm. The Durbin Watson value of 2.175 of the model suggests that the result of the regression model is valid. Hence, this result supported the Hypothesis H2 of "innovation firm is related to firm operational performance".

H2A: Product innovation is related to firm operational performance in SMEs. Table 7 shows Beta value of 0.541 for the relationship between product innovation to firm operational performance is significantly related at p<0.01. Hence, Hypothesis H2A is supported.

H2B: Process innovation is related to firm operational performance in SMEs.

Table 7 shows that Beta value of 0.057 is not significant for the relationship between process innovation to firm operational performance. Therefore, Hypothesis H2B is not supported.

H2C: Organizational innovation is related to firm operational performance in SMEs.

Table 7 shows that Beta value of 0.330 is not significant for the relationship between organizational innovation to firm operational performance. Therefore, Hypothesis H2C is not supported.

H2D: Marketing innovation is related to firm operational performance in SMEs.

Table 7 shows that Beta value of -0.171 is not significant for the relationship between marketing innovation to firm operational performance. Therefore, Hypothesis H2D is not supported.

**Table 7: Regression model for independent variables and firm operational performance**

No.	Description	Beta Standardized
	Model Coefficients	
1.	Product Innovation	0.541**
2.	Process Innovation	0.057
3.	Organizational Innovation	0.330
4.	Marketing Innovation	-0.171
	Model Summary	
1.	R	0.696
2.	R <sup>2</sup>	0.484
3.	Adj. R <sup>2</sup>	0.413
4.	F Change	4.713***
5.	Durbin-Watson	2.175

\*\*\* p<0.001 level; \*\* p< 0.01 level; \* p< 0.05

H3: Innovation firm is related to firm innovative performance in SMEs.

The result of the independent variables with innovative performance is shown in Table 8. The R value of 0.758 and the F-value is at p<0.001. Thus, it indicates that innovation firm is significantly related to firm innovative performance. The R Square change value of 0.575 means that 57.5% of firm innovative performance is explained by all independent variables. The Durbin Watson value of 1.726 suggests the regression result model is valid. Thus, Hypothesis H3 is supported; innovation firm is related to firm innovative performance.

H3A: Product innovation is related to firm innovative performance in SMEs.

Table 8 shows Beta value of 0.454 for the relationship between product innovation to firm innovative performance is significantly related at p<0.05. Hence, Hypothesis H3A is supported.

H3B: Process innovation is related to firm innovative performance in SMEs.

Table 14 shows that Beta value of 0.251 is not significant for the relationship between process innovative to firm innovation performance. Therefore, Hypothesis H3B is not supported.

H3C: Organizational innovation is related to firm innovative performance in SMEs.

Table 8 shows that Beta value of 0.352 is not significant for the relationship between organizational innovation to firm innovative performance. Therefore, Hypothesis H3C is not supported.

H3D: Marketing innovation is related to firm innovative performance in SMEs.

Table 8 shows that Beta value of -0.200 is not significant for the relationship between marketing innovation to firm innovative performance. Therefore, Hypothesis H3D is not supported.

**Table 8: Regression Model among Independent Variables and Firm Innovation Performance**

No.	Description	Beta Standardized
	Model Coefficients	
1.	Product Innovation	0.454**
2.	Process Innovation	0.251
3.	Organizational Innovation	0.352
4.	Marketing Innovation	-0.200
	Model Summary	
1.	R	0.758
2.	$R^2$	0.575
3.	Adj. $R^2$	0.516
4.	F Change	9.811***
5.	Durbin-Watson	1.726

\*\*\*  $p < 0.001$  level; \*\*  $p < 0.01$  level; \*  $p < 0.05$

### Discussion, Conclusion and Recommendation

This section is on discussion, conclusion and recommendations. The discussion covers the research objectives, literature review, hypotheses and analysis of results. Recommendations for business and further studies are provided.

#### Discussion

This study investigated whether SMEs innovation is related to its performance. Previous international innovation study's researchers have indicated that innovation firm is a major element in the SMEs performance. The elements of innovation firm include the product innovation, process innovation, organizational innovation and marketing innovation (Gunday et al., 2011). It is clear from the findings in this study that Johor SMEs are innovative to achieve their objectives and goal.

This study is also aimed to determine whether there is a relationship between innovation and SMEs performance. Literature related to the innovation of firm indicates that most of the studies show innovation firms have a significance relationship with SMEs performance. This study found that the innovation of SMEs is significantly related to its financial, operational and innovative performance.

Roxes et al. (2014) reported that product innovation is significantly related to firm performance. However, this study shows that product innovation has a moderate positive relationship with firm operational and innovative performance but not significantly related to firm financial performance.

Gunday et al. (2011) found process innovation is significantly correlated to innovative performance, and it influences it through product innovation. However, this study shows that process innovation is not significantly related to financial, operational and innovative performance.

The findings of Damanpour et al. (2009) revealed that distinctive competencies, organizational capabilities outcomes can be attained with the help of certain innovation types. However, this study shows that organizational innovation has a moderate positive relationship with the firm financial performance but not significantly related to firm operational and innovative performance.

Gunday et al. (2011) found marketing innovations have both direct and indirect effects on innovative performance. Conversely, this study shows that marketing innovation is not significantly related to financial, operational and innovative performance.

### Conclusion

It was found that Johor SMEs are innovative in their product innovation, process innovation, organizational innovation, and marketing innovation as their firm innovation which is translated into their firm performance. This is evident by the strong positive relationship between firm innovation and firm performance at  $p < 0.001$  level. The standardized beta of the regression analyses shows that organizational innovation is significantly related to financial performance and that product innovation is significantly related to the operational performance and innovative performance. These findings imply that to enhance financial business performance, SMEs need to modify the organizational and their management system. They should be renewing the production and quality management systems. They should be renewing the organization structure to facilitate teamwork. They should be renewing the routines, procedures and processes employed to execute firm activities in an innovative manner.

These findings imply that to enhance operational and innovative performance, SMEs need to be effective in their manufacturing cost especially on the elements and materials of their current products. New products development should enhance the ease of use for customers and customer satisfaction. Enhancing the manufacturing quality of components and materials will help in improving their current products.

### Recommendation

It is obvious that SMEs should focus more on organizational innovation to increase the firm financial performance as these two variables are strongly and significantly found to be related. They should be prepared to adapt and adopt organization structure that facilitates teamwork and it is important for them to use better production and quality management systems. SMEs that focus on product innovation are able to enhance innovative performance. They can achieve it by

enhancing technical specification and functionalities totally differing from their current products, improving ease of use, competitive cost and quality of components and materials for customers and enhancing customer satisfaction.

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