

# SOURCES OF INNOVATION AND ITS IMPACTS ON FIRM PERFORMANCE: A FRAMEWORK EXPLORING INNOVATION AS MEDIATOR FOR THE CASE OF MALAYSIA SMEs

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## Abstract

*SME growth is essential to the economic growth of a country. However, according to the OECD Review of Innovation Policy in 2013, Malaysia has yet to enter a stage of innovation-led growth in terms of economic development and the country business research performance has not significantly improved in the last decade. This phenomenon suggests that some sources of innovation should be examined in order to successfully promote innovation-led growth amongst SMEs in Malaysia. Therefore, this study aims at developing a constructive framework to examine the relationships between sources affecting innovation and firm performance in order to help local SMEs to design proper strategy for better firm performance in the future.*

**Keywords:** innovation, firm performance, SMEs

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## 1. Introduction

Innovation among SMEs has been the popular research topic of many researchers in the past decades due to its significant contribution economic growth. According to Ar and Baki (2011), SMEs contribute to innovations of today at the same time they play important role as innovators for economic development in the future. Due to the importance of SMEs to the growth of an economy, many studies relevant to SMEs innovation (Tudor, Ceci & Lubatti, 2012; Zaharie & Osoian, 2014; Raposo, Ferreira & Fernandes, 2014) have been conducted. Based on their findings, as firms successfully implementing innovation, especially in terms of product and process, they will be able to experience better firm performance e.g. greater productivity, higher sales turnover, profitability growth etc. Innovativeness of a firm is very essential for it to sustain in rapid changing environment. In innovation absence, not only the individual firms' sustainability will be affected, at the same time, it will also influence the competitiveness of whole sector (Brown, Bessant & Lamming, 2013).

Innovation is defined as the implementation of new or improved characteristics of the product, process, organization and methods of marketing in a business firm, workplace organization and external relations (Malaysia Science and Technology Information Centre,

n.d.). It can be divided into several types such as product innovation, process innovation, market innovation, organizational innovation, behavioural innovation etc. As concluded by Varis and Littunen (2010), since there are so many types of innovations, it is reasonable to assume that not all types of innovation are related to the performance of firms. In their study, product, process and market innovation positively associated with firms' growth. Therefore to achieve high growth, firms must spend some efforts to promote innovation in their organization. High-growth firms outperform low-growth firms by producing new products and services and entering new market (Tucker, 2008). Rather than looking at the relationship between innovation and firm performance, this study will use wide range of measures of firm innovation which include product innovation, process innovation and market innovation.

In this study, product innovation is defined as changes and improvements in products/services in order to satisfy customer needs. It is very important to the growth of SMEs (Varis & Littunen, 2010). While process innovation means the introduction of new methods in production, management approaches and technology which can improve production and management processes (Hilmi et al., 2010). It is believed that process innovation, which involves incremental improvements, not only contributes to the productivity gains but at the same time, it helps cost reductions (Maital & Seshadri, 2007). Junge, Severgnini and Sorensen (2015) attest that market innovation which is rarely studied in the past, contributes to a firm's productivity growth especially for skill-intensive firms. In this study, market innovation is referred to the entering of new market to meet customers' needs, at the same time capture more market share.

Most of the existing studies relevant to innovation have discussed the dimensions or factors related to innovation (Guimaraes, 2011; Lin & Liu, 2012, Raposo, Ferreira & Fernandes, 2014), relationships between innovation and firm performance (Panayides, 2006; Ar & Baki, 2011) as well as country growth (Torun & Cicekci, 2007). However, there is still lack of studies related to the relationship between factors affecting various types of innovation, and the effect of different types of innovation on firm performance. This study is mainly to fill the gap by investigating the interactions between types of innovation, its sources and firm performance. At the same time, the mediating role of innovations also will be assessed.

## **2. Sources of Innovation**

Better firm performance is fostered by numerous internal and external sources. Previous studies related to SMEs innovation stress mostly the importance of internal factors influencing innovation, very few studies emphasize on external sources which include support from the government/public sector. Inauen and Schenker-Wicki (2011) assert that the internal knowledge or sources in an organization are not sufficient in this rapid changing environment where firms should source knowledge and technology outside a firm's boundaries. Varis and Littunen (2010) reveal that internal competencies of firms are found not associated with innovation, in contrast, external information are found positively influencing different types of innovation. Therefore, a total of three internal sources in an organization (R&D strategy, strategic leadership and learning orientation) and two external sources (customer relationship, supplier relationship and government support) will be included in this research framework.

### **2.1. R&D Strategy**

R&D has been popularly discussed in most of the innovation relevant study. R&D is important factor contributes to product and process innovation. Supported by Castellacci (2008), R&D spill over is important for knowledge creation and it contributes to innovation in both

product and process. Tang (2006) finds R&D essential in generating product innovation. To support new product development, the use of qualitative market research enables firms to understand better market segment, the needs of customers, price premium and product positioning (Barczak, Griffin & Kahn, 2009). Market research is the one of the common ways used to learn customers or potential customers' desires by gathering, recording and analysing data related to the marketing of goods and services (Byrd & Megginson, 2009). It is very useful in improving marketing activities. On the other hand, invest in R&D leads to greater product quality, better manufacturing processes and cost reduction (David, 2011).

## **2.2. Strategic Leadership**

Entrepreneurial leadership is essential to the growth of any small business (Katz & Green, 2014). According to Katz and Green, leader of a firm must think about the future of the business, the competition strategy, the ways to grow and the new things to try. He/she also must be capable to manage the company resources well especially provide guidance to the employees who are lost in the business operations. From the strategic leader's perspective, managers as leaders in an organization must be able to execute a plan that contributes to success by combining resources and capabilities at the same time configure value chain activities in rapid changing environment (Carpenter & Sanders, 2009). The strategic leadership ability of the management team is a resource that provides small business a competitive advantage and it can be acquired via experience (Shepherd & Wiklund, 2005).

The leadership style of CEOs or owners of an organization is important to create innovation (Garcia-Morales, Llorens-Montes & Verdu-Jover, 2007). A firm can promote creative atmosphere via encouraging their people to visit customers and attend exhibition, at the same time, recognizing creative people and communicate understanding in unavoidable failures (Barrell et al., 1992). Guimaraes (2011) provides evidence that show direct relationship between strategic leadership and success in business innovation. The author concludes that both charismatic leadership and transactional leadership are important in developing success business innovation. The former involves guidance to an organization and inspiring confidence in order to make dramatic changes and extraordinary performance. The latter focuses on the role of supervision, organization and group performance where leaders motivate and direct followers through rewards and punishments.

## **2.3. Learning Orientation**

Learning and innovation are always associated. Learning orientation which is referred to the creation and the use of knowledge enables firms to understand the environment well and thus it influences the implementation of new ideas, products and processes (Calantone, Cavusgil, S. & Zhao, 2002). Supported by Dorrach (2005), knowledge management which is measured by knowledge acquisition, knowledge dissemination and responsiveness to knowledge; have direct effect on innovation. Learning is critical to innovation (Salim & Sulaiman, 2011). The authors suggest that managers should promote a learning climate in the organization for knowledge creation and sharing. This is because learning creates desire to adopt new ideas and helps firms to seek ways to achieve competitiveness through various innovation processes.

In a recent study, Real, Roldan and Leal (2014) define organizational learning as a dynamic process to generate knowledge creation in the organizations via its individuals. Creativity of individuals through new idea generation and implementation enable enhancement of innovative products (Gumusluoglu & Ilsev, 2009). Based on creativity-innovation cycle developed by Lee,

Kim and Jun (2007), the connections between employees creative ideas generation, ideas sharing, ideas implementation and learning from market response allow company to execute breakthrough innovations.

#### **2.4. Customers Relationship**

Customer focus and product innovation are associated (Ar & Baki, 2011). According to Barrell et al. (1992), consulting customers is the most powerful way to achieve incremental improvements to existing products. The sharing of knowledge of customers helps firms to develop and commercialize new products (Duarte & Sarkar, 2011). The formation of buyer-seller relationship also enables greater firm's competitiveness advantage by developing new products/services and processes that fulfil customer preferences (Panayides, 2006). On the other hand, the learning of customer satisfaction and perception contributes to direct effect on new product success (Baker & Sinkula, 2005). Due to the various advantages brought by customers' feedback, firms should maintain and manage the customer-relation well in order to best meet customers' expectation in this changing market environment.

Customer relationship management (CRM) is a key factor in small business growth and sustainability (Longenecker et al., 2006). CRM is a marketing strategy to retain right customers by learning their interest and meeting their needs. There are some ways to collect customer feedback such as follow-up contacts and conduct interviews using survey form. According to the authors, to avoid failure in pursuing innovation, creating a product or service that customers perceive as adding value to their lives is one of the rules of thumb. That is firms must produce the products or services that best meet the customers' expectations, which they cannot find it elsewhere.

#### **2.5. Suppliers Relationship**

According to Ceci and Lubatti (2012), the combination of personal relationship and professional relationship prone to stimulate innovation activities which include product, process, organizational and IT related innovations. They refer personal relationship to the presence of trust, shared value and mutual objectives in networks. While the professional relationship is pertaining to relationships occur among members in the industry, clients, suppliers and competitors. Jayaram (2008) claims the probability of new product success is dependent on supplier involvement in new product development process. It is believed that the improvements in supplier's creative problem-solving and technological capabilities contribute to firm new product development (Lawson & Krause, 2014).

#### **2.6. Government Support**

The customers and suppliers relations are main focus of most new firms. However, as the firms grow; they must extend their focus on government regulatory bodies, the media and the stockholders, including family (Hendrickson & Psarouthakis, 1992). Based on their findings, top performers are most likely to involve in activities related to government and public relation. In a technological innovations relevant study in South Korea, Doh and Kim (2014) indicate that as the number of government fund rises, the technological innovations in the form of number of patent and new design registration rise as well. On the other hand, Varis and Littenun (2010) conclude that information sourced from the national support organizations contribute to both product and market innovations. According to them, the public support instruments are important when the internal competencies and networking of small firms are limited.

The government relations not only enable small firms to know the government law and regulations well, at the same time, it provides some useful assistance and control (Byrd & Megginson, 2009). The authors stress that some essentials aids include loans, publications, business start-up consultation, awards, training and technical assistance. The local and regional government can ensure the match between the innovation-related needs of SMEs and the services provided by the regional infrastructure by studying their needs in terms of technology, finance, training and some other organizational issues (Cobbenhagen, 2000). In a recent study, Radas, Anic, Tafro and Wagner (2015) prove that both subsidies and tax incentives granted by government strengthen the R&D orientation of a firm as well as the firm's innovation output, as a result, the percentage of sales from innovation also increases.

### **3. Innovation and Firm Performance**

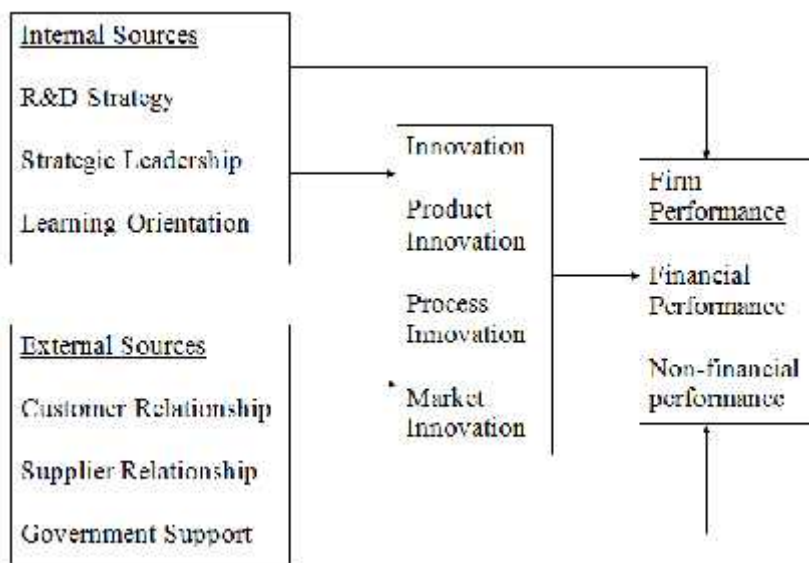
Bessant and Tidd (2011) prove that improved product and process affect firm financial performance in costs reduction and increase in sales. Many studies in the past measured firm performance in the form of firms' financial growth (Filippetti, 2011; Chen & Huang, 2012; Daiya, Kohei & Heroshi, 2012; Raposo, Ferreira & Fernandes, 2014). However, as suggested by Shepherd & Wiklund (2005), firm performance is multidimensional in nature. In their study, firm performance is divided into total ten different dimensions such as sales growth, revenue growth, product/service quality, customer satisfaction, etc. The authors further explain growth as better measurement for performance and it is much more accurate and accessible as compared to accounting measures of financial performance. In this research, the firm non-financial performance will be integrated with the financial performance for the performance measurement. The former is mainly about the increase in sales turnover and profit based on the managers' perceptions while the main focus of the latter focuses on the improvement in production efficiency, customer value and market performance.

### **4. Research Framework**

In this study, the diffusion of innovation and the resource-based view are the two main theories that provide greater understanding pertaining to the innovation-led growth phenomena among SMEs. The resource-based view (RBV) was introduced by Wernerfelt in 1984, emphasizes the assets and capabilities possesses by a firm, which enable the firm to achieve competitive advantage. While the diffusion of innovations theory was developed by Rogers in 1962 which, emphasizes the spread of innovations over time through certain channels of communication among members in a social system.

According to RBV, better firm performance or competitive advantage can be realized by effective used of valuable resources and capabilities of an organization (internal sources). But Dorrach (2005) finds some resources may not affect firm performance directly. Dorrach attests that some resources in terms of knowledge management have indirect impact on firm performance. Due to drastic change in information technology and customer preference, the superior technology and products, excellent people, and good leadership owned by a firm do not necessary yield sustainable profitability in this competitive environment (Teece, 2010). The author suggests a business model in the context of innovation to be properly formed to make sure it delivers value to customers. Therefore, there should be a missing link between firm's resources and performance that need to be examined. By integrating concept of innovation into the theory of RBV, it provides a better understanding of how better firm performance can be realized via the adoption of innovation.

The diffusion theory of innovation stresses the important of acquisition of information and knowledge either within an organization or from other institutions outside the organization (internal and external sources) in order to promote innovation. It is expected that the efficient use of a firm’s capabilities enable the firm to bring superior outcomes such as innovation and superior financial performance (Dorrach, 2005). Therefore, this study extends the framework of Roger by including financial and non-financial firm performance as a result of successful adoption of different types of innovation. On the other hand, it also integrates some external sources such as relationships with customer, supplier and government into the RBV framework to demonstrate the importance of relationship management which contributes to greater firm performance. A theoretical framework, Figure 1, is developed to illustrate the interactions between sources of innovation, types of innovation and firm performance. The framework suggests that there are relationships between sources of innovation and firm performance and these relationships are mediated by innovation.



**Figure 1: Theoretical framework**

## 5. Research Instrument

In this study, data is collected using self-administered questionnaire. The multi-item research instruments are adopted and developed based on few sources as exhibited in Table 1. To ensure the content validity, the pre-pilot study and pilot study were performed. In the pre-pilot study, a total of four managers and a senior executive were participated to review the questionnaire to ensure adequacy, readability, clarity and completeness of the questions. Then, minor amendment was made in order to make sure the instruments are easy to understand and relevant to the study. Then, a pilot test that involved 22 SMEs was conducted and the result of reliability test is as follow. The Cronbach’s Alpha in Table 1 is the reliability test that measures internal consistency of a set of scale or test items. It shows how closely related a group of items are for measuring a construct. The alpha value ranges from 0 to 1; the value 0.6 deemed the lower limit of acceptability (Joseph, Rolph, Ronald & William, 1998). The alpha values in Table 1 reveal that all values indicate high level of internal consistency except process innovation; however its reliability is still at acceptable level.

**Table 1.**  
**Research Instrument**

Variables	No. of Items	Cronbach's Alpha	Source of Reference
R&D Strategy	4	0.91	Ar & Baki, 2011
Strategic Leadership	6	0.94	Ar & Baki, 2011; Guimaraes, 2011
Learning Orientation	7	0.95	Sulianto and Rahab, 2012
Customer Relationship	5	0.87	Ar & Baki, 2011
Supplier Relationship	4	0.92	Ar & Baki, 2011
Government Support	5	0.93	Radas et al., 2015; Doh & Kim,
Product Innovation	5	0.83	Ar & Baki, 2011
Process Innovation	5	0.65	Ar & Baki, 2011
Market Innovation	6	0.85	Ar & Baki, 2011
Firm Performance	13	0.94	Ar & Baki, 2011; Hilmi et al.,

## 6. Conclusion

Better firm performance is fostered by numerous reasons consist of internal sources and external sources. This study is expected to identify the significant relationships between innovation, its sources and firm performance for SMEs in Malaysia. The mediating effect of innovation between sources of innovation and firm performance also will be examined. The constructive feedback from SMEs in Malaysia will be collected and it is expected to help managers to design the sound strategies in order to cultivate innovative climate in the organizations. This is believed to be very essential in improving the performance and competitiveness of their firms. The empirical evidence in future research work that shows relationships between product, process, market innovation and firm performance may provide insights to managers that their effort to encourage different types of innovation will finally contribute differently to their firm performance as compared to focusing only on the common types of innovation (product or process innovation).

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