

# INBOUND AND OUTBOUND INNOVATION IN SMES: ROLE OF MARKET ORIENTATION AND SME PERFORMANCE

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**ABSTRACT:** Over the past decade, the role of Small business enterprises (SMEs) in country's development is well acknowledged by the researchers and practitioners. However, the role of Malaysian SMEs in this regard is not up to the required standard. Researchers are looking ways to enhance the performance of this sector. Many researchers emphasized the role of market orientation and innovation to enhance the SME performance. However, limited literature is available on the way SME sector can incorporate the market orientation and innovation to enhance performance. The current study aims to investigate the relationship of market orientation, inbound innovation, outbound innovation and SME performance. The study used a random sample of 250 employees of Malaysian SMEs. Data was collected through a self administered 5 point likert scale questionnaire. Results of the current study indicated that there is a positive relationship of market orientation with SME performance, whilst inbound innovation mediates the relationship between the market orientation and firm performance. Thus, it is recommended to the Malaysian SMEs to bring innovation to the products and services using internal resources and practices rather than outsourcing the innovation to enhance the performance.

**Keywords:** Small business enterprises; Market orientations; inbound, outbound, innovation

## 1.0 INTRODUCTION

Small and medium enterprises (SMEs) have been considered as a major source of enthusiasm, modernization and suppleness for both underdeveloped and developed economies of the world. SMEs plays important role in country's development by creating job through economic activities [1,2]. In addition, SMEs are the major source of economic development in many countries and play an important role to create job opportunities as compared to large organizations [3,4].

The same phenomenon also prevails in Malaysia. In Malaysia SMEs consists of 97.3% of country's businesses and the major source of growth and innovation [3]. The figures of gross domestic product (GDP) show that the SMEs sector contributed 32.5% of the GDP in 2011 and recorded a relatively strong GDP growth (6.8%). However, the contribution of SMEs of the Malaysian economy is relatively low as compared with other developed and developing countries have SMEs contribution to the economy more than 50% of GDP. Even in developing countries SMEs are playing important role in the development of economy and contributing 38% of GDP [3]. As SMEs play an important role in the economic growth of many countries, there is a great opportunity for Malaysian SMEs to develop into the most important domestic source of growth. The existence and development of SMEs is very difficult in the current competitive business environment and international market; the satisfaction level of customers has become very high. They demand cheaper products, best services, diversified products, and quick delivery [5]. It is a big challenge to deliver the right product and service at the most appropriate time and at the lowest possible cost to the right customer [6, 7]

The advancement in the business models such as lower manufacturing costs, providing more values to the customers, best product quality, unmatched service and the prevalent impact of information technology (IT) are increased the competition for businesses to survive [8]. These challenges

pressurise the business partners to establish cross-boundary relationships with each other. Thus, researchers are finding the newer ways to enhance SME performance through the customer orientations and bringing novelty to the product. However, still the question is largely unanswered that how market orientation and open innovation can be linked to the SME performance in the context of Malaysian SMEs. Aims of this study are to modelling Market Orientations of the SME to enhance their performance through bringing innovation.

## 2.0 LITERATURE REVIEW

### 2.1 Market Orientation

The market orientation principles which are based on the classic marketing doctrine are widely used to improve business performance [9]. The classic policy suggests fulfillment of customer requirements is the key to the improvement of SME performance [10]. Market orientation, an important marketing philosophy, Originating from this doctrine, focused on the importance of complete knowledge of the market [11]. The literature of the past few decades shows that market orientation concept has received considerable attention of the researchers. It is not only a philosophy, but a concept which leads the organization to do business in the twenty-first century [12]. However, it is important to clarify that what is market orientation before giving the formal definitions adopted in theory. The marketing concept provides the fundamentals of market orientation, while on the other side, modern marketing theory is based upon the concept of market orientation. Market-oriented organizations developed their products according to the demand of their customer rather than just to sale them [13]. To achieve this customer focus, the organizations make their strategy that customer needs are their priority and in such a ways they achieve a competitive advantage, reduced costs and increased profits [14]. Every market oriented SME must follow strategy to create a competitive advantage [15]. According to Slater and Narver [16] market orientation empowers the marketer to find out needs of future market and

improved competition through sustain competitive advantage. This shows that market oriented SMEs have a competitive advantage in both the efficiency and speed in terms of their responsiveness to threat as well as opportunities. Market orientation helps to create superior customer value by carefully and continuously gather information about customers and competitors and using that information for continuous learning and build-up of knowledge [18]. Research has proved that the performance of that companies are better which have market-oriented approach as compared to the companies which are less market oriented [19-23]. In effect, market orientation is a broader concept which cannot be bounded into the marketing concept. The marketing plans of an organization to compete its competitors and macro-environment are the result of inter-functional co-ordination, established from market intelligence. The management purpose of market orientation is to enhance organizational performance by the marketing efforts of all departments [24]. The major purpose of market orientation, which is associated with customer orientation, competition orientation, innovation and profit orientation is to create satisfied customers [25]. Market orientation is actually a commitment of an organization to its customers, and its ability to provide requirements of the market in a timely manner [21]. Market Orientation is a vast term which has full awareness of customer wants and needs, competitor strategies and external committed market forces and is considered as the major component to establish successful organizational behaviour [26].

## 2.2 Inbound and outbound Innovation

Globalization and rapid technology development have pushed the organizations to get more benefits by opening up their boundaries to access knowledge [27]. In an inbound open innovation strategy, SMEs open up their boundaries and create and use relationships with external organizations such as suppliers and universities to access the knowledge and competencies of others. They improve their own innovation performance by adding the knowledge learned from other organizations [28]. This strategy is considered explorative because the organization is searching for new information and technologies which help them to improve their products or services, open new horizons and become more efficient. Organizations not only considered the development of their internal R & D [29], but also learn the knowledge and innovations from external organizations such as suppliers, research institutes, universities, and competitors [30]. The common practices for open innovation strategy include licensing-in technology, joint ventures, funding university research, purchasing technical and scientific services, joint ventures and acquisitions [31]. When management is allowed to learn for new sources of innovation, it can open the new horizons to find new ideas and technological innovations. The search strategy is categorized by variables: Search scope includes the networks the organization uses for the search activities and the search depth is the intensity of the search. However, the search can be very lengthy, laborious and costly which can affect the innovative strategy of the organization if they spend too much time and resources for the search activities [32].

For every organization try to retrieve outside knowledge and adjust it into the SME's boundaries, but there is another strategy in which SME sell their ideas or providing access to other organizations [33], this is known as outbound open innovation. Sometimes Organizations make long-term investments in R&D only to find out the compatibility of certain knowledge or technology with their business model, but this investment cannot be considered as spoiled. By licensing these technologies to other SMEs, the SME can earn revenues from innovations otherwise, which can be a waste [32].

## 2.3 SME Performance

A performance metric is important for SMEs to know about performance slandered either it is improving or reducing or what are the correcting measures required [34]. SMEs performance is a multidimensional concept. Researchers linked SMEs performance with the achievement of its goals [35]. Hsu et al. [36] measured performance of a firm through product quality, average selling price and competitive position. In fact, SMEs market orientation and attainment of financial goals are the indicator to measure SMEs performance. SME performance measured by using multidimensional scale based on three separate dimensions customer service, encompassing competitive position and product quality. Koh et al. [38] measures for SMEs performance in SMEs by using the reduced inventory level, reduced lead time in production, increased flexibility, forecasting accuracy, cost saving and accurate resource planning. In addition, customer satisfaction is most important measure for SMEs to judge their performance and effectiveness. From customer feedback the concerned department of SMEs update their policies to fulfil the customer expectations [38]. Researchers have find out many different ways to measure organizational performance, but best way to measure performance is the combination of operational and financial dimensions. Financial dimensions must comprise profit, return on investment, and growth of sales, business effectiveness and performance. SMEs performance in this study includes six items intended to measure SME performance on the basis of financial and non financial measures.

## 2.4 Hypothesis Development

Recently, many studies have focused on the concept of market orientation in relation with organizational performance. [13-21, 29, 38]. Thus, many researchers investigate the relationship of market orientation and SME performance a moderated relationship. some researchers tried to investigate the antecedents of the market orientations. Over the years, Considerable amount of literature has been published to the study of market orientation and innovation to escalate the SME performance. Innovation is an essential factor for maintaining productivity and it is also a strong strategy to develop the profitability for customer-oriented SMEs [40]. Innovation is always a concern, no matter if the organization is large-scale or not. It is increasingly becoming an important instrument for SMEs' transformation when the whole organization is willing to upgrade and reform [41, 31]. Innovation in large-scale companies is defined as strategic changes; while for small SMEs, innovation management can be achieved as a huge breakthrough in its true sense. While it

comes with many opportunities, opportunities are always accompanied by risks and challenges, which mean that innovation in most businesses involves taking risks and managing unpredictable hazards. On the bright side, we can identify this incremental development on innovation management as functionally refined through practical experiences and frequent efforts [42]. SMEs have begun to change competitive strategies in both domestic and international markets which lead to a number of SMEs that are under stressed. Therefore, the innovation around SME has turned into the key driving-force of SME growth, as well as the success or failure in business achievement [41-42]. There are many academic researchers who work on innovation, but there are very few studies on SMEs innovation. SMEs innovation may be developed and applied differently, which in turn innovation may grow in other directions. In a cross-industry context addressing this phenomenon of opening up to external sources of innovation, Henry Chesbrough [43] has coined the term 'open innovation' which he defines as a paradigm that assumes that SMEs can and should use external ideas as well as internal ideas, and internal and external paths to market, as SMEs look to advance their technology. Depending on the origin of the idea and the chosen path to market, innovation can be divided into two dimensions. Inbound innovation, comprising practices leading to the acquisition of external knowledge and expertise which are then developed internally and marketed by the focal SME and outbound innovation is concerned with the transfer of internal knowledge to external organizations for commercial purposes[43,44]. Due to the reciprocal nature of the innovation process, an inbound activity of one party is simultaneously an outbound activity for the providing counterpart. Consequently, there are always as many inbound as outbound activities ongoing. However, there seems to exist an imbalance regarding the preference to pursue one mode or the other. Whereas inbound innovation represents an already quite established practice in most companies, outbound innovation has been found to be practiced to a much lesser extent [33]. This indicates that a small number of companies specialized on outbound activities are providing a large variety of companies with assets.

Innovation either inbound or outbound is essential for the customer oriented products. Market oriented behaviour leads to grater innovation and ultimately enhance the SME performance. Slater and Narver [16] , extending this view, conclude that SME with a strong market orientation are best situated for innovation process either inbound or outbound. Keskin H. 2006 [46] argued that bringing innovation is helpful in increasing organizational performance. Furthermore, he considers innovation as missing link between the market orientation and performance. Similarly Atuahene-Gima K. 1996 [47] discussed the relationship of market orientation and innovation with SME performance. On the basis of this discussion study conceptualized the research framework. Figure 1 shows the framework of the current study. We proposed following hypotheses on the basis of the research framework

H1: Market Orientation is positively related to SME performance.

H2: Inbound innovation mediates the relationship between the market orientation and SME performance

H3: Outbound innovation mediates the relationship between the market orientation and SME performance

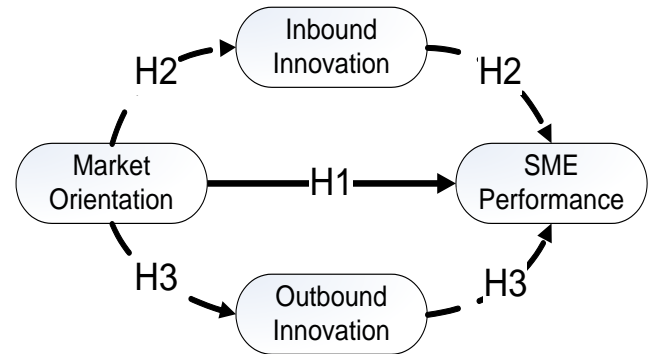


Figure 1: Research Framework

### 3.0 Methodology

#### 3.1 Sample

We collected data from 250 employees of SMEs in Malaysia. Unit of Analysis in the current study were organizations. Following sections highlights the demographic analysis using frequency tests of the respondents. Majority of the respondents belongs to the age group of 30-40 years (55.6%). This is followed by respondents belonging to the age category of 26-30 years (35.2%), rest belongs to the other age groups. Gender wise analysis indicated that the majority of the respondents was male (58.3%), this shows that the SME in Malaysia is male dominated. The education level indicates that the majority of the respondents were graduates (47.8%). Second highest frequency was the respondents having master's level education (22.5%) and those who have intermediate or high secondary certificate were 18.8%.

#### 3.2 Measures

Measurement scale for market orientation, was adopted from Narver and Slater's [16] market orientation scale; current study used market orientation as single construct based on five items. All items were measured through the 5 point Likert scale ranging from strongly disagree to strongly agree. Inbound open innovation was measured through the scale developed by Sisodiya (2008)[48]. Five items were used to measure the construct based on 5 points Likert scale ranging from strongly disagree to strongly agree. The construct outbound innovation was measured through the five item scale used by Lichtenthaler, 2009 [49]. The construct SME performance was measured on the basis of six items adapted from Gunasekaran *et al.* [50], the measurement items were measured on a 5-point Likert scale Strongly Disagree to Strongly Agree.

### 4.0 RESULTS

#### 4.1 Measurement Model

As a required step in testing the conceptual models, the suitability of the computed variables must be assessed.

Confirmatory factor analysis was conducted by using AMOS 18. The results of the CFA indicated that all of the values are within the acceptable ranges as shown in Table. The factor structure of each model fits the data and all fit indices met the respective criteria with  $\chi^2$  =Chi-square; DF= Degree of Freedom; CMIN= Minimum Chi-square; GFI= Goodness of fit index; RMR= Root Mean Square Residual; RMSEA= Root Mean Square Error of Approximation; NFI= Normed Fit Index; TLI= Tucker Lewis Index; CFI = Comparative Fit Index and AGFI= Adjusted Goodness of Fit Index. The criteria for eliminating the items were set on the basis of the factor loadings and the residual values of the each item. The factor loadings  $>.50$  was selected to retain the items.

Annexure 1 showed the results of measurement model. At the first stage, all latent constructs were correlated to test the measurement model fitness of all constructs. Initial results showed two items SP6 and OB3 having low factor loading and removed from further analysis. To ensure good fit modification indices had been address at a later stage. All error terms had been correlated which had the modification indices above than 10. Through this procedure model fit has been improved to  $\chi^2= 1130.476$ ,  $df = 808$ ,  $CMIN/DF=1.40$ ,  $RMR= .058$ ,  $GFI= .918$ ,  $AGFI=.848$ ,  $TLI=.896$ ,  $CFI=.915$ ,  $RMSEA=.057$ . These values indicated a good model fit for the measurement validation through CFA.

Convergent validity is the construct indicators that reflect a large amount of the mutual proportion of variance among factors. It determines the amount of correlation among the measures of the same concept [49]. Convergent validity deals with construct loadings, average variance extracted (AVE) and construct reliabilities. Average variance extracted is the sum of square of standardized factor loadings to represent how much variation in each item is explained by latent. The average variance extracted is the average percentage of variation explained by the measurement items in a construct. The standard value of AVE is .50 or greater. Table 1 shows the average variance extraction of each construct and results showed that all the constructs have more than .50 of average variance extraction, that shows all the constructs have sufficient amount of convergent validity. Range of Average Variation Extractions are 0.507-0.595.

The threshold value of the construct reliability is .70 or above [49-55]. Table 1 shows that all the constructs have adequate reliability of all constructs ranges from .753 to .879. Therefore, the current study does not violate the convergent validity of the constructs.

Discriminant validity referred to the extent to which an instrument contains a construct that was truly distinct from all others. Discriminant validity is the degree to which similar constructs have distinct values. In this type of validity the responses are measured without cross loading in terms of latent constructs [50]. Discriminant validity is violated when the correlation among exogenous constructs is more than 0.85. In discriminant validity the value of the square root of average variance extraction should exceed than the value of inter-construct correlations. Table 1 shows the inter-construct correlations. Results indicate that all the constructs have adequate discriminant validity as the square root of average variance extracted is greater than the inter-construct correlation of each variable and also the values of inter

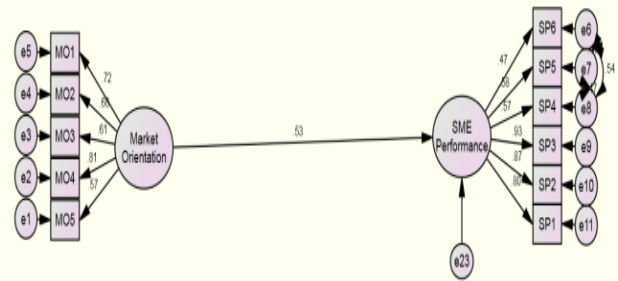
construct are less than .85. It means results provide sufficient evidence of discriminant validity of the constructs.

**.2 Structural Model**

The proposed structural model consists of 3 hypotheses, as indicated in figure 1. Structural model composed of basic four constructs, Named Market orientation, inbound innovation, outbound innovation and SME performance. First hypothesis of the study states that H1: Market Orientation is positively related with SME performance. So the standardized path coefficient of market orientation and SME performance was 0.53 with p value less than 0.05. Thus hypothesis 1 had been accepted and study establishes a positive relationship between the market orientation and SME Performance. Figure 2 shows the direct relationship

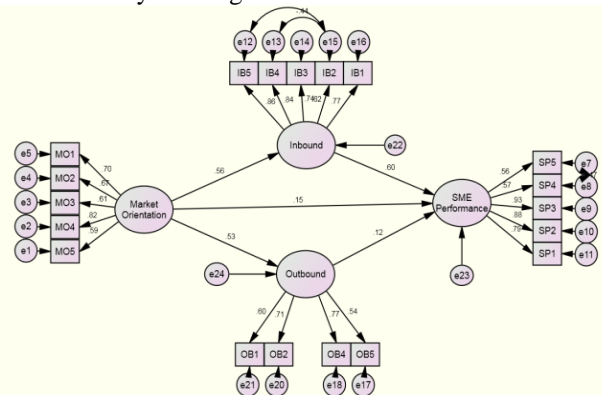
**Table 1: Measurement Model**

	CR	AVE	IB	MO	SP	OB
<b>IB</b>	0.879	0.595	<b>0.771</b>			
<b>MO</b>	0.812	0.507	0.555	<b>0.712</b>		
<b>SP</b>	0.870	0.581	0.719	0.538	<b>0.762</b>	
<b>OB</b>	0.753	0.537	0.373	0.525	0.418	<b>0.733</b>



**Figure 2: Structural Model 1**

We used Preacher and Hyes (2008) [51] method to test the mediation of inbound and outbound innovation. For this purpose study used two step approaches. At first step all direct relationships has been estimated in two ways, first direct relationships without mediator and second direct relationship with mediators. At second stage all indirect effects had been calculated and their significance through the bootstrapping had been calculated. At stage two of the analysis all mediators had been estimated to calculate indirect effects of the study. Figure 3 shows the structural model for mediation analysis using indirect effects.



**Figure 3: Structural model 2 (Mediation Analysis)**

Hypothesis 2 states that *H2: Inbound innovation mediates the relationship between the market orientation and SME performance*. To test this hypothesis study calculated the indirect effects of the path  $MO \rightarrow IB \rightarrow SP$ . Path coefficient was 0.336, to test whether the path is significant or not. Study used bootstrapping with 1000 iteration to test the p values. P value of the indirect path was 0.000. This value is lower than the 0.05. So the hypothesis H2 had been accepted. Thus, inbound innovation mediates the relationship between the market orientation and SME performance. As the direct relationship without mediator was significant and it was still significant when IB was entered, so this confirms the partial mediation. H3 of the study stated that *H3: Outbound innovation mediates the relationship between the market orientation and SME performance*. Thus study calculated the indirect path  $MO \rightarrow OB \rightarrow SP$ . Path value was 0.064 with the p value 0.071. This value is above than 0.05, so the hypothesis H3 has been rejected, Table 2 showed the details of the mediation results.

**Table 2: Mediation Analysis (Indirect Effects)**

Hypotheses	Direct Relationship without mediator	Direct Relationship with mediator	Indirect effect	Result
$MO \rightarrow IB \rightarrow SP$	0.53** (0.000)	0.15* (0.030)	0.336** (0.000)	Partial Mediation
$MO \rightarrow OB \rightarrow SP$	0.53** (0.000)	0.15* (0.030)	0.064 (0.071)	No mediation

## 5.0 CONCLUSION

SMEs are the intensive contributors of the national GDP, however in the case of Malaysian SME sector the contribution to national GDP is low as compared to the developed countries. So the SMEs are looking new ways to improve the SME performance to enhance. Researchers are agreed on the role of market orientation for the SME strategies to enhance the performance and provide the innovative products to the customers. Thus, it is more important for the SMEs in context of Malaysia to model their strategic marketing orientation that suits their innovation strategy. We tested the relationship of market orientation and SME performance along with the mediating role of inbound and outbound innovations to provide customers innovative product and services. Marketing orientations and innovation are viewed, now more than ever, as stimuli to economic growth and major components of competitive advantage. The relationship between market orientation and innovation is, however, a subject of debate. Based on anecdotal evidence, some scholars argue that market orientation has negative consequences for outbound innovation and organizational performance because it leads to the development of uncompetitive products rather than inbound innovations. On the contrary, others suggest that market orientation leads to successful innovation and higher organizational performance. Results indicated that the market orientation is positively related with SME performance. SME sector in Malaysia

required strategizing business policy in accordance with the customers perceptible. Study also confirms the mediating role of inbound innovation. Thus, SME sector required to welcome innovation in their systems and focus on the internal integration of the resources to produce innovative products rather than importing from outsource. In the current knowledge-based setting of our global economy, leverage of knowledge and creation of new commercializable ideas are crucial processes which have to be managed properly if a SME wants to sustain its competitive advantage and thus its survival. In addition to competitive pressure exerted by multiple players wanting to reap the benefits from this lucrative market, this sector faces severe challenges from a multitude of directions, ranging from significant decrease in R&D-productivity, All these challenges currently faced by the SME indicate that the current business model is far from optimal. Clearly, there is a need for a new business model delivering higher level of customer satisfaction and innovative output.

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**ANNEXTURE 1: MEASUREMENT MODEL**

