Management 2015, 5(3): 90-95
DOI: 10.5923/j.mm.20150503.02

Effect of Innovation on the Performance of SMEs Organizations in Nigeria

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Abstract This study investigates how innovation affects business performance in small and medium-sized enterprises (SMEs) in an up-and-coming market, like Nigeria. Data was collected from 200 respondents of six SMEs companies based in Nigeria. Innovation was measured using the OECD Oslo scale (2005). The study demonstrated that there is a high correlation among factors used to measure innovation. And secondly, innovation was found to influence business performance.

Keywords Innovation, Small and medium enterprises, Firm's performance

1. Introduction

A driving force for competitive scuffle in the present chaotic environment is innovation. Introducing new products and services are at the nucleus of economic growth and development. The ability to innovate has caused researchers to study activities leading to initiative advancement of individuals and organisations. Small and medium-sized enterprises (SMEs) furnish a strong increase to employment and economic growth specifically due to their innovative activities which becomes a main force of explaining competitive advantage and firm performance [1, 2]. Accordingly, the values fashioned by innovations shows potential circumstances that uncovered new ways of doing things or new products and processes that add benefits to economic fortunes.

In both developed and developing countries of the world, SMEs companies have proofed to be prominent in terms of employment and added values to gross domestic product, 'yet their full potential remains untapped' Schlogl, (2004) cited in [3]. The support given for the start up of SMEs, necessitate them to becoming important engines for innovation and technological advancement. In 2007, The World business council for sustainable development gave a summary of the weight SMEs lend to government and individuals: SMEs that are properly supervised become means of employment prospect and affluence creation. They aid in the generation of revenue and create communal solidity. Bigger organizations are provided with local services and supplies and communities have access to affordable goods and services at lower costs. Furthermore, 'by working closely with SMEs, large corporations can develop a new customer base that may not be accessible to the traditional distribution networks of these corporations' [3]. Thus SMEs are a reliable source of supply and have understanding of the pattern of procurement.

SMEs, world over have been found to provide jobs for about 75% of the workforce of any country. In periods of liberalization and privatization SMEs especially in emerging economics, has become vital economic tools and bedding seeds for entrepreneurship development and indigenous technology that create employment [4, 5, 6] and are better positioned over bigger firms in their capacity to be innovative [7]. However there are barriers to the activities of innovation in SMEs which according to [5, 8, 9, 10] include a lack in capital investment, infrastructure, education and training systems, encumber regulations, and in general deficiencies in know-how and skills acquisition. Other barriers include constrained managerial capabilities, difficulty in utilizing technology which results in low productivity among others. Consequently, investing in innovative behaviours strengthens knowledge of employees and individuals that drive resilience of the organizations to create new products, processes, and new behaviour of working that generates improve competitiveness and achievement of necessary goals to shape performance.

Existing literature has described innovation differently. For example [11] affirmed there are three types of innovation, product, process and strategy or business model innovation. [12] explains innovation to include five types: new products, new methods of production, new sources of supply, the exploitation of new markets, and new ways to organize business. For [13], innovation is seen as a process of equipping in new, improved capabilities or increased utility. [14] categorized organisational innovation into two (a) technological innovation which include product, service and process; and (b) administrative innovation that includes

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Published online at http://journal.sapub.org/mm

organisational arrangement, administrative process and program.

The present study seeks to incorporate the definition of the Organization for Economic Co-operation and Development [15], which is the main acceptable international basis for defining standards concepts of knowledge economy. It states innovation activities and have explained four different innovation types; product innovation, process innovation, marketing innovation and organizational innovation. This is aimed at obtaining an all-inclusive illustration of the construct and its effect on firm's performance in emerging economic like Nigeria.

2. Literature Review

2.1. The Concept of Innovation

The last decades has been characterised by rapid social, political and technological change. The literature has recognized various phrases such as 'globalisation, global warming, the borderless world, personal computer and the Internet' that have entered the vocabulary of this era. The movement in organizations and business are becoming more complex rather than simple, dynamic than steady and aggressive in nature than tame [16].

In this period, there is confusion in the meaning of innovation and invention. According to [17], "an *invention* is an idea, a sketch or model for a new or improved device, product, process, or system" whereas "an *innovation* in the economic sense is accomplished only with the first *commercial* transaction involving the new product, process, system or device…" Thus innovation is the utilization of new ideas which stem from the bedrock of ideas and is in essence characterised by change [10]. Moreover, in turbulent periods organizational can become flexible when they try incessantly to reinvent their business model [18]. The accomplishment of innovation can be reached through technological facilities, trained workforce and management support for innovation.

The significance of innovation as firms' resources has been shown in the literature by a wide range of definitions. [11] argued that innovation "is the coming up of ideas and bringing them to life". The [19] defined innovation as 'the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of products, supply, and distribution; the introduction of changes in management, work organization, and the working conditions of the workforce'. The Innovation Union [20] classified innovation as "change that speeds up and improve the way we conceive, develop, produce and access new products, industrial processes and services …..". In line with the different definitions given, innovation can therefore be viewed as a process of furnishing and improving on products and services to appeal to customers' taste and demand and which expand on workers' aptitudes.

OECD, (2005) differentiates four types of innovation: product, process, organisational and marketing. Product innovation refers to the new or improved product, equipment or service that is successful on the market. A process innovation entails the implementation of a new or enhanced manufacturing or distribution process, or a new course of social service. In addition to product and process innovation, there is organisational innovation. Organisational innovation results in new ways of categorizing internal associations, directing and empowering employees, molding careers and rewarding work with pay and benefits [21]. This leads to more effective use of human resources that are of importance to the successful utilization of ideas [10]. Marketing innovation engages in the improvement of target mix of markets and how selected markets are attended to. The objective of marketing innovation is to bring about major changes in product design and/or packaging, placement and promotion. Thus according to [22], 'innovation is intrinsically about identifying and using opportunities to create new products, services or work practices'. More so the report of [15] had shown that firms decisions to expand on innovations has brought about improvement in workers capabilities, better wages and salaries and a decisive prospect for employees. Consequently, these effects of innovations on firm performance vary in scale from sales, market share and profitability to output and efficiency.

2.2. Innovation and Firms Performance

A firm performance is related to the ability of the firm to gain profit and growth in order to achieve its general strategic objectives [23]. It is a consequence of the interaction between actions taken in relation to competitive forces that allow the firm to adapt to the external environment, thereby integrating competence and usefulness [24]. [25], citing (Keizer et al.) emphasized that the firm's innovation performance depends on the opportunities provided by their external environment. This implies that SMEs becomes very competitive in an emerging market when they give importance to innovative activities that build their reputation in the market environment. Essentially, the key reason for innovativeness is the desire of firms to obtain increased business performance and increased competitive edge [26].

[27] investigated the relationship between firms' performance and its familiarity with innovation and research. It was found that; outlook of firms towards innovations has high score in the competitive environments so as to gain higher competitive lead. Through an integrated innovation-performance analysis carried out by [25] on 184 manufacturing firms operating in Turkey, the effect of organizational, product, process and marketing innovation was explored on different aspects of firm performance-innovation, production, market and financial. The results showed an evidence of a positive relationship of innovations on firms' performance.

The study of [28] 'the relationship between learning

orientation, firm innovation and firm performance' in US firms found that learning orientation is significant for innovation and performance. [29] considered innovation practices and its effects on performance of SMEs in Australians. With an investigation of 600 firms in the manufacturing sector, the study results showed that, innovation strategy is a key driver to performance of SMEs, which do not appear implement innovation culture in a strategic and structured manner, The conclusion of the study was that SMEs performance is likely to improve as they increase the degree to which they realized that innovation culture and strategy are closely aligned throughout the innovation process. The study of 320 SMEs operating in the ICT industry in Malaysia was investigated by [30]. The investigation revealed that organizational learning contributes to innovation capability and in turn innovation is positively related to firm. In the work of [31] where 1,091 samples of SMEs in Spanish manufacturing firms was studied, the finding showed innovation (product, process and administration system) was related to performance.

The hypothesis for this study will therefore be the following:

- H1 There is an association between Technological (product and process), Market and Administrative Innovation and Firms' performance.
- H2 Market innovation is positively related to market performance.
- H3 Administrative innovation is significantly related to Production performance.

3. Methodology

The study uses a survey design method. Innovation was measured with sub variables of product and process, market and administrative innovations. Firms' performance was measured with sub scale of production, market and financial performance.

A sample of 20 SMEs operating in the Lagos and Ibadan metropolitan area were selected using convenient sampling techniques.

The questionnaires used in the study were in three parts: five point Likert scale was used to measure innovation and performance items adopted from the works of Gunday et al. which was adapted from Oslo manual, 2005. Demographic data use for personal background, included gender and age of respondents.

A validity and reliability test of the constructs was conducted. The Cronbach's alpha of each construct is innovation, 0.82 and firms' performance is 0.86.

Data was analysed through qualitative and quantitative approaches. Descriptive statistics was used to analyze quantitative data with the use of Statistical Package for Social Sciences (SPSS) and the subsequent data analyses was undertaken using ANOVA (Analysis of variance).

4. Results and Discussion

A total of 350 questionnaires were given out to the twenty firms identified to be small and medium enterprises. 200 of the questionnaires were returned and found useful giving a response rate of 57.1%.

Table 1 shows the summary of the regression analysis that seeks to establish the relationship between Innovation and Firms' performance. With an adjusted R-squared of 0.528 percent, it means that innovation (product and process, market and administrative) 53% of the variations in Firms' performance.

The F value of 75.328 indicates that the overall regression model is significant. This signify that there is a significant relationship between the predictor variable of innovation taken together and Firms' performance.

Table 3 shows the results of the regression analysis based on the sign of the coefficient and the t-ratio. From the analysis the constant has a t-ratio of 4.13. This indicates that the other factors that affect Firms' performance and have not been included in the model are statistically significant in determining performance. The constant is also positively related to Firms performance indicating that the impact of these factors which are not in the model will impact on Firms' performance level positively.

Table 1. Regression analysis

Mode	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.732[a]	.536	.528	2.55169

a Predictors: (constant) Innovation

Table 2. Analysis of Variance (ANOVA) Results

	Sumof Squares	df	Mean Square	F	Significance
Regression	1471.417	4	490.472	75.328	0.000
Residual	1276.178	196	6.511		
Total	2747.595	200			

Table 3. Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.309	.800		4.137	.000
Technological innovation	.230	.071	.249	3.239	.001
Market innovation	.355	.072	.429	4.960	.000
Administrative innovation	.099	.067	.116	1.488	.138

Table 4. Correlation Analysis Market Innovation to Market Performance

		Market Innovation	Market performance
Market Innovation	Pearson correlation	1	.679**
	Sig. (2-tailed)		.000
	N	200	200
Market Performance	Pearson correlation	**679	1
	Sig. (2-tailed)	.000	
	N	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5. Regression analysis for Production performance with respect to Administrative innovation

Administrative Innovation	Dependent variable: Production performance	
	Adjusted R^2	Standard coefficient b
	.542	.738

Table 3 shows that technological innovation and market innovation are important factors on financial firm's performance. While the most influencing factor is market innovation with a t-ratio of 4.96, this was followed by technological innovation with a t-ratio value of 3.239. The result however shows that the contribution of administrative innovation is not significantly related.

The results are consistent with the literature review. [29] studied the innovation practices and its effects on performance of Australians SMEs, and found that innovation strategy is a key driver to performance of SMEs. More so, in [27] they investigated the relationship between firms' performance and its familiarity with innovation and research. The results showed that firms' disposition to innovations ranked high in the competitive environments in order to obtain higher competitive advantage. The result also affirms the report of [30] who specifically showed that technological (product and process) innovation and market innovation are two vital features in both financial and market performance.

The Pearson correlation was used to reflect the degree of linear relationship between two variables and determines the strength of the linear relationship between the variables. Based on the confirmation of directionality shown in Table 4, sufficient evidence exists to accept hypothesis H2 that market innovation is positively related with market performance at a confidence level of 0.99.

Table 5 shows that Administrative innovation is a significant factor for production performance. With a result of (R2 = 0.542) it shows that administrative innovation positively influenced production performance. This result is in agreement with the study of [32] who argued that 'innovation leads to increase market share, greater production efficiency, higher productivity growth and increased revenue'.

5. Conclusions

SMEs are known to account for a substantial share of every country's economy. The relative importance of this segment of the economy needs an examination of their enterprises' performance. Therefore the fact that the SMEs performance strongly relies on their innovativeness attracts active importance to the analysis of innovation activities and their effects.

In the study, the link between innovation and firm performance was examined and data was collected from

small and medium enterprises operating in Nigeria. The study provided support to the hypothesis proposed thus laying importance on the role of organisational innovation capability on firm performance.

The ultimate goal of innovation is to improve business performance. Given that presently, the business environment is continually changing, innovation becomes a competitive advantage when it is based on the understanding of customers' needs to guarantee high quality of life of the people and harness a dynamic sector to make certain that expansions are solid based and beneficial than ever. Therefore public and organizational policies should be designed in ways that addresses horizontal concerns and which generates better and viable inducement for innovation activities.

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