

The Sustenance of Dynamics Capabilities for Improving Firm Performance: a Study of Selected Furniture Industry in Abuja, Nigeria

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Abstract

This study examines the way in which technological-innovation capabilities affect the performance of selected furniture industries in Abuja, Nigeria. The study draws on literature and empirical studies on dynamic capabilities. Empirical data was acquired through randomly selected furniture industries. The study also attempted to showcase that innovativeness is one of the fundamental instruments of growth strategies to enter new markets, to increase the existing market share and to provide the industry with a competitive edge. The measurement scales of technological innovation capability were adopted from Guan and Mua (2003) and Yam, et al (2004). After reviewing various literatures, four performance indicators were found to be appropriate for this study. Both quantitative and qualitative data were collected through personal interviews. The questionnaire were pre-tested and the interviewees were asked to provide their views on various aspects of innovation and competitiveness. The data analysis technique employed were descriptive statistics and correlation analysis and all computation were done using the SPSS package. The study found that there exist a positive correlations between the variables, that different patterns of technological innovation have a significant impact on the industry's performance. We recommended that government policies should encourage innovation in the industry by reducing the tax rebate and that managers should recognize and manage the innovations in order to boost their operational performance.

Keywords: *Dynamic Capability Via Technological-Innovation Capabilities and Firm Performance in Furniture Industry.*

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Background to the Study

In today's knowledge driven world, dynamic capabilities have risen in relevance to become a key policy issues. The relentless competition has driven firms to constantly adapt, re-new, reconfigure and recreate their resources and capabilities in line with competitive environment, and building effective dynamic capabilities and continuous innovation have become key activities for achieving competitiveness in the business environment. Firms looking to compete in the global markets need to accumulate the required knowledge. Westphal et al (1985) defined dynamic capability as the ability to make effective use of technological knowledge in production, investment and innovation. Dahlman et al (1987) conceived dynamic capability as the ways to use existing technology to produce more efficiently and to use the experience gained in production and investment to adapt and improve the technology in use. Teece et al (1997) viewed dynamic capability as the capabilities that give firms the competences of adapting to change in their environment. Dynamic capability as a theoretical concept arose from the criticism directed to the concept of Resource Based View (RBV), because it did not take into account factors relating to the development of the capabilities of firms, instead RBV emphasizes only on the selection of resources. Leaving out the process of adaptation to the external environment.

The dynamic capabilities view builds on four central issues;

- i. The ability to alter the resource base in relation to the changing environment as fundamental to dynamic capabilities (Teece et al, 1997).
- ii. Dynamic capabilities create market change, not only respond to it (Eisenhardt and Martin, 2000).
- iii. Dynamic capabilities are context dependent, not possible to generalize the performance or even existence of dynamic capabilities without taking into account the institutional environmental and market context (Winter, 2003).
- iv. The resource base of the firm is path dependent and dynamic capabilities alter these paths (Helfat, 1997).

In essence, Teece et al (1997) argued that dynamic capabilities enable organizations to re-new competencies and to strategically manage the internal and external organizational skills and resources required to maintain performance in the face of changing business conditions. Based on these facts, this study adopted the concept of technological-innovation capabilities as a model from dynamic capabilities for the study of Nigeria's furniture industry. This study examines the role of technology-innovation capabilities as an important source of competitiveness to introduce new product technologies quickly with high yields and low cycle times, which in turn is aided by superior performance in solving the myriad problems that exist in the industry.

The concept of technology-innovation capability is developed within the studies, which serves to explain the nature and rate of technological change. It is defined as a dynamic network of agents interacting in a specific economic/industrial area under a particular institutional infrastructure and involved in the generation, diffusion and utilization of technology (Carlsson et al 1991). This study examines the factors associated with the accumulation of technological-innovation capability in the Nigeria's furniture Industries. Technology-Innovation Capability is one of the factors that enable an enterprise perform

some functions critical to economic development and competitiveness. Accumulating these capabilities especially in the Nigeria's Furniture Industry is considered to be a learning process which requires absorptive capability. Murovec and Prodan (2009) described absorptive capability as the ability to learn and solve problems. It facilitates absorbing existing knowledge, assimilating it and in turn generate new knowledge. It facilitates innovation which in turn drives productivity growth. Consequently, for a nation to improve its competitiveness or experience improved productivity and economic growth, it needs to pay attention to the accumulation of technological capability. Various researchers and institutions have developed different approaches to audit a firm's technological innovation capability. For example, Christensen (1995) examined technological-innovation capabilities in terms of science research assets, process innovation assets, product innovation assets and esthetics design assets. Chiesa et al (1996) used two methods to assess the innovation capability of an organization, namely a process audit and a performance audit. The process audit focused on the individual processes necessary for innovation, product development technology acquisition, leadership resourcing system and tools. Yam et al (2004) adopted a functional approach where the separate functions of an organization were to be evaluate. The capability dimensions were learning capability, R & D capability, marketing capability, organizational capability and strategic planning capability. This study is an attempt to develop a framework that could assist to determine the subtle links between innovation capabilities and firm performance. The framework could be used by the furniture industry for self assessment to identify problems of its capability status.

Objectives of the Study

The main objective of this study is to examine the factors influencing the technological-innovation capabilities in the Nigeria's furniture industry. Other specific objectives include:

1. Contribute to a better understanding of the issues of the dimensions of technological innovation capabilities.
2. Strength on firms technological capabilities including the usefulness of fostering learning.
3. Initiate technological change in the Nigeria's furniture industry.
4. Evaluate the theoretical and empirical development of dynamic capabilities in order to identify the issues to be resolved.
5. Identify the communalities of dynamic capabilities across firms, drawing from a profile, but fragmented body of empirical findings.
6. Provide a better understanding of how firms should direct their resources and capabilities in search of sustained competitive advantage.

Statement of the Problem

This study posits the factors that led to low technological innovation capabilities in the Nigeria's furniture industry, which include low management ability, inability to attract funds due to lack of suitable collateral and structural deficiencies associated with poor training, inadequate and incoherent policies/legislation and low innovation capability.

Research Hypothesis

In the course of this study, the following hypotheses were formulated to guide the study:

1. H₀: Technological innovation and industry's performance are significantly related.
1. H₀: Different patterns of technological-innovations have significant impacts on the industry's performance.

Review of Related Literature

The search for an enhanced understanding of dynamic capabilities continues. Eisenhardt and Martin (2000) argued that dynamic capabilities exhibited commonalities across firms and that such commonalities have not been systematically identified. Researchers refer dynamic capabilities to a wide range of resources, processes and capabilities. Zollo and Winter (2002) reckoned that dynamic capabilities were structured and persistent in a given organization. Rindova and Kotha (2001) through their empirical research identified dynamic capabilities as emergent and evolving. In this study, the researcher defines dynamic capabilities as a firm's behavioural orientation to constantly integrate its resources and capabilities in response to the changing environment to sustain competitive advantage. By this definition, we argued that dynamic capabilities are not simply processes but embedded in it. Amit and Schoemaker (1993) argued that capabilities are firm-specific and are developed over time through complex interactions among the firm's resources.

Several kinds of technological-innovation capabilities are distinguished in the literature. For the purpose of this study, the most crucial type is innovation capability, which refers to the ability to make major improvements and modifications to existing technologies and to create new technologies (Lall, 1992). The notion of innovation capability applies to process technology, product technology as well as the way in which production is organized and managed. Its importance is derived from the fact that it is presumed to contribute to dynamic competitive advantage of companies as it enhances their capability to keep up with, respond to and initiate technological change on an ongoing basis. The innovation capability is crucial in a competitive economic environment characterized by fast change. It is a special asset of a firm. Adler and Shenbar (1990) defined innovation capabilities as the capacity of developing new products, satisfying marketing needs, applying appropriate process technologies to produce the new products and to satisfy the future needs.

Tyabji (2000) places emphasis on two other significant components of innovative capabilities, namely management's capacity for effective absorption of knowledge and labour processes conducive for innovation. Teece (1996) stressed that innovation is an interactive process characterized by technological inter-relatedness between sub-systems. Evangelista et al (1997) regarded R & D activities as a central component of the technological innovation activities expenditure. Danneels (2002) pointed the importance of customer competence and technological competence on product innovation.

Rosenberg and Frischtak (1985) affirm that a company's technological capability is acquired through the process of designing and making new products. Anderson (2003) affirms that technological innovation is at the core of the company's competitive capability while Gallon et al (1995) suggested that the innovation capability is the most important core asset of the organization. Hafeez et al (2002) attest that a company should develop its competitive edge in order to acquire long-lasting competitive advantage, and that the companies need to be

constantly aware of the changing environment while keeping and developing new capabilities in order to survive.

Walsh and Linton (2002) emphasizes that technological innovation is a unique technique or manufacturing process owned by a company which allows it to react quickly to an environmental shift.

Burgelman et al (2004) pointed that technological innovation designates the capability of an organization to choose, use, diffuse and then improved a technology, as such, it is a progressive process of experience accumulation of the use of technology, the improvement and application of existing technology. Yam et al (2004) state that technological innovation is the skill involved in realizing and supporting a company's technological innovation strategy. It is a specific asset or resource which includes technology, products, expenditure, processes knowledge and experience. In their study, they proposed seven dimensions for measuring technological innovation.

Archibugi and Coco (2005) point that technological innovation is the ability to access and digest external knowledge unique skill or knowledge, then using it in a dynamic way to improve or develop a new product. Guan et al (2006) remark that technological innovation is the combination of knowledge, techniques and management skills from different areas the company can build its organizational competitiveness.

Drucker (1985) defined innovation as the process of equipping in new improved capabilities or increased utility. In the OECD Oslo manual (2005), four different innovation types were introduced. These include product innovation, process innovation, marketing innovation and organizational innovation. Product and process innovations are closely related to the concept of technology developments. Miller (2001) stated that most firms seek technology innovation to gain competitive advantage. Innovative performance is seen in the literature as one of the most important drivers of other aspects of organizational performance. Han et al (1998) pointed that innovative performance contribute positively to organizational growth and profitability. They also asserted that innovative performance is the missing link between organizational strategic orientations and performance.

Methodology

Empirical data was acquired through a survey study of 120 respondents from the selected Nigeria's furniture industries located in Abuja Nigeria. Findings from the relevant literature were used to develop the questionnaire. The variables were grouped using the seven capability dimensions of Guan and Ma (2003) and Yam et al (2005). Specially, the questionnaire investigated the following aspects, knowledge and skills, Research and Development (R & D), human and financial resources and others.

The seven capability dimensions are briefly describe as follows:

1. Learning capability: Represent a firm's ability to identify, assimilate and exploit knowledge from the environment.
2. R & D capability: Refers to a firm's ability to integrate R & D strategy, project implementation, project portfolio management and R & D expenditure.

3. Resource allocation capability: This ensures that a firm has enough capital, professionals and technology in the innovation process.
4. Manufacturing capability: Refers to a firm's ability to transform R & D results into products which meets market needs.
5. Marketing capability: Refers to firms ability to publicize and sell products on the basis of understanding consumers' needs, competition situation, costs and benefits.
6. Organizing capability: Refers to a firm's ability in security organizational mechanism and harmony, cultivating organizational culture and adopting good management practices.
7. Strategic planning capability: Refers to a firm's ability to identify internal strengths and weakness and external opportunities and threats, formulate plans in accordance with corporate vision and mission and acclimatize the plan to implementation.

After reviewing various literatures, four performance indicators were used in this study, namely, sales performance, innovation performance product performance and market performance. Both quantitative and qualitative data were collected through personal interviews. The questionnaire was pre-tested and the interviewees were asked to provide their views on various aspects of innovation and competitiveness. The interview was largely unstructured. At the end of the interview, the respondents were then requested to fill in the structured questionnaire in the presence of the researcher. The data analysis techniques employed were descriptive statistics and correlation analysis techniques. All computations were done using the SPSS package.

Data Collection

A sample of ten (10) furniture industries with a total respondents of 120 employees were randomly selected from the furniture industry. The majority of the furniture industries were located in Abuja. Before the field work, a draft of the questionnaire were reviewed by experienced academics and pre-tested.

Data Analysis and Results

The major findings of this study is presented as follows: the industries involved in this study included selected furniture industries located in Abuja, Nigeria.

Table1: Results on Sales Performance

Technological-Innovation Capabilities	Mean	Standard Deviation
Manufacturing Capability	9.40	3.52
Organizing Capability	9.37	3.46
Resource Allocation Capability	8.28	2.67
Strategic Planning Capability	8.57	2.84
Learning Capability	9.45	3.58
Marketing Capability	9.42	3.56

Source: Survey Data
P < 0.05

The result above shows that the learning capability with mean (9.45) and standard deviation (3.58) shows the highest value for the sales performance of the selected furniture industries. The result indicated that sales growth depended mainly on the learning capability of the industry that develop it, follow by the marketing capability (9.42) with a standard deviation of (3.56). The result is in accordance with literature that associates sales performance with marketing excellence.

The above result shows that the learning capability was the strongest ability that assist the furniture industry to move into new activities.

Survey results indicates that the industry with stronger technological innovation capabilities have higher product competitiveness as shown in the table below:

Table 2: Results on Product Performance

Technological-Innovation Capabilities	Mean	Standard Deviation
Manufacturing Capability	6.37	2.24
Organizing Capability	5.74	1.62
Resource Allocation Capability	6.50	2.46
Strategic Planning Capability	5.92	1.86
Learning Capability	6.45	2.42
Marketing Capability	6.84	2.64

Source: Survey Data

In this case, marketing capability was found to play an influential role with a mean of (6.84) and standard deviation (2.64) on the product performance, follow by the resource allocation capability (6.50) with a standard deviation of (2.46). It is worth mentioning that learning capability was significant for steady industry to product performance with a mean of (6.45) and standard deviation of (2.42). The marketing capability proved to be the strongest and most influential one in product performance and the sine quo non of technological innovation capabilities that decided the industry competitiveness.

Table 3: Descriptive Statistics and Correlation Analysis

Variables	Mean	SD	1	2	3	4	5
Product Performance	6.30	2.20	0.542				
Market Performance	6.28	2.18	0.538	0.531			
Innovative Performance	5.25	2.10	0.46	0.45	0.44		
Financial Performance	5.22	1.95	0.44	0.42	0.40	0.38	
Organization Performance	4.84	1.26	0.40	0.38	0.35	0.32	0.30

Source: Survey Data

The correlation analysis shows a strong positive association between factors as shown in the table. Therefore we deduce that higher product, marketing and organizational capabilities were associated with increased innovative, and marketing performance. The findings support the claim that innovations exhibited in the furniture industries have positive and significant impacts on innovative performance of the industry. These findings substantiate our conceptual model and offer several management implications. Our findings support the fact that innovation strategy is an important major driver of firm performance and should be developed and executed as an integral part of the business strategy. In essence, innovation performance play the most important role as it acts like a hub where positive effects of innovation types were gathered and then conveyed to other identified variable performance.

Future Research Directions

This study is not without its limitations. Not including large industries in our sample somewhat limits the findings. However, our findings might encourage the continuation of theoretical and empirical research on new product development and performance and its impact on technological innovation capability. Such empirical research might include other variables than those incorporated in the present effort. Further research of a longitudinal nature is needed to support or refute our findings.

Conclusion

Technological-innovation capability is one of the driving factors of industry's competitiveness. It is very important for an industry to have core technology capability and new thinking and development directions in operations management. Several studies as pointed in this study have shown that the need for innovation as a key source of competitive advantage for many organizations. In today's competitive environment, the challenges for all business are not only to innovate in existing market and remain profitable, but also to innovate in new markets in order to stay in front to competitors. Hence, in order to maintain sustainable development and enhance innovative capability, the furniture industry should reconsider their practices, identify the gaps and closely review their technological-innovation capabilities to their strategies.

Recommendations

This study opined that some policies if introduced by the government would increase the intensity of innovation in the Nigeria's furniture industry. Such policy include infrastructure support and tax rebate. Most industries in Nigeria believe that a reduction in the corporate tax would encourage more indigenous firms to innovate and that adequate provision of infrastructure would promote innovation.

Second, we recommend that the government should create an enabling political and economic environment characterized by strong institution access to funds. Third, the government should attract key actors, particularly supplies closer to the firm through interventions. Managers of the industry should put additional emphasis on innovation as they are important instruments for achieving sustainable competitive power.

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