



Product Innovation as a Panacea to Manufacturing Organization Performance: Evidence from Nigerian Breweries Plc

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

Innovation is widely regarded as one of the most important sources of sustainable competitive advantage in an increasingly changing environment. However, many Nigerian manufacturing industries do not invest so many resources on the utilization of modern technologies, as this makes for the decline in the designing and development of new products. This study examined the effect of product innovation on the performance of manufacturing sector with particular reference to Nigerian Breweries Plc. Purposive sampling technique was used to select 70 respondents from various departments. Structured questionnaire was employed to collect the data, while weighted mean score, chi-square and analysis of variance were used to analyze the data. Result revealed that product innovation has significant effect on sales volume. Findings also indicated that positive relationship exist between product innovations, customer satisfaction, changes in consumer taste and preference. The study therefore concluded that product innovation is an alternative paradigm to organizational performance in a global competitive environment. Subsequently, the study recommended that management of manufacturing organizations should leverage on product innovation, as this type of innovation is found to be important instrument for achieving sustainable competitive power.

Keywords: *Innovation; product; performance; satisfaction; taste; preference; customer; NB.*

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1. INTRODUCTION

Manufacturing sector has been acknowledged by the scholars, researchers, professionals and economists as a driver of economic growth, structural change, and catch-up state. According to Warren [1], manufacturing has long been a cornerstone of many national economies, being a crucial sector that generates productive jobs and sustainable economic growth. World Economic Forum (WEF) Report [2] also highlights that manufacturing is significantly important to the prosperity of nations "with over 70% of the income variations of 128 nations explained by differences in manufactured product export data alone. This indicates that the increasing demand for manufacturing stimulates the sustainable economic growth and development in terms of job creation, investments and innovations. Prior studies [3,4,5,6] and statistical data argue that manufacturing represents a high export sector and pays relatively high wages, a main driver for employment in other sectors, including services, a key source of investment in research and development. McKinsey Global Institute [7] points out that the role of manufacturing in the economy changes over time and it differs according to the economic development stage of the country. Emilia [8] notes that, in developed economies manufacturing has the ability to drive productivity growth, innovation and trade.

In Nigeria, though the manufacturing sector is growing at a faster pace, still it has failed to a large extent with regards to its percentage share in the total GDP. An analysis of the GDP figures based on current prices obtained from the National Bureau of Statistics showed that the manufacturing sector's contribution to the economy dropped drastically. Data obtained from the Manufacturers Association of Nigeria (MAN) affirmed that Nigeria experienced its worst situation in manufacturing as 820 companies shut down or suspended production in 2018. This menace aforementioned has been attributed to the lack of innovation [9]. This may be the reason why Global Innovation Index 2018 ranked Nigeria 118th position behind other African countries like South Africa (58), Mauritius (75) and Kenya (78). Many Nigerian manufacturing industries do not invest so many resources on the utilization of modern technologies, as this makes for the decline in the designing and development of new products. This might not be appropriate for present and future circumstances, which could make the organizations to fade away with

time. Consequently, the sector in Nigeria have been experiencing cut-throat competition from both local and multinational companies.

Innovation is widely regarded as one of the most important sources of sustainable competitive advantage in an increasingly changing environment, because it leads to product and process improvements, makes continuous advances that helps firms to survive, allows firms to grow more quickly, be more efficient, and ultimately be more profitable than non-innovators [5]. In the same vein, Abbing [10] observe that innovation nowadays have become major source for creating the distinctive identity of the organization. Particularly in the case of intense competition within any industry there is huge requirement of ensuring that the innovation must be the part of company's strategies so that the customers could be attracted and the situation of intense competition could be handled. In another study, Gunday, Ulusoy, Kilic and Alpkan [11] postulate 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 company with a competitive edge. This connotes that for organizations to wax stronger in a global competitive environment, they have to leverage on innovation, since swiftly changing technologies and severe global competition rapidly erode the value added of existing products and services.

It is on this premise that this study intends to examine the effect of product innovation on organizational performance with specific reference to Nigerian Breweries Plc.

1.1 Research Questions

The following questions shall be the focus of this study:

- i. To what extent does product innovation increase sales volume of Nigerian Breweries?
- ii. Do changes in taste and preference of consumers necessitate product innovation in Nigerian Breweries?
- iii. Is there any relationship between product innovation and consumer buying decision?

1.2 Objectives of the Study

The general objective of this study is to examine the effect of product innovation on organization

performance with specific reference to Nigerian Breweries Plc. Other specific objectives are:

- i. To examine if product innovation will increase sales volume of Nigerian breweries.
- ii. To determine whether changes in taste and preference of consumers will necessitate product innovation.
- iii. To examine the relationship between product innovation and consumer buying decision.

1.3 Statement of Hypotheses

The following hypotheses are formulated in null form for the study:

- H₀₁:** Product innovation has no significant effect on sales volume.
- H₀₂:** Product innovation has no significant relationship with changes in consumer taste and preference.
- H₀₃:** There is no significant relationship between product innovation and consumer buying decision.

1.4 Justification for the Study

This study will be rooted in understanding the importance of product innovation and the benefits the manufacturing companies will derive, because it is a guide towards understanding the importance of innovation in creating a product that are capable of facing competition in a dynamic environment. It will also give a firm's product the opportunity to remain in the growth stage for as long as possible, knowing fully well that business environment is highly dynamic, and the success of any business must revolve round innovative ability for successful product development that will create a market for a firm's product. Further the significant aspects is related to fact that how manufacturing organizations can influence buying behavior positively through product innovation.

2. LITERATURE REVIEW

2.1 Concept of Innovation

Innovations have been studied in a variety of contexts, including economics, management, technology, sociology, and engineering. Therefore, there is a wide range of approaches to conceptualize and operationalize the innovation construct. The word innovation is originated from Latin word, *innovare* which

means "to make something new". The concept of innovation was introduced by Schumpeter [12] as the introduction of new products, new methods of production, new sources of supply, new ways of transportation, new markets, and new forms of industrial organization. According Drucker [13], innovation is the entrepreneurs' specific tool to exploit change for a diverse business or service. Innovation can be presented as a discipline which can be learned and practiced. Daugherty et al. [14] also sees innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption. In this early view, innovation was done by entrepreneurs in new enterprises, involving radical changes that wipe out existing ways of doing things; innovation creates a "creative destruction." This initial view on innovation has been broadened by many researchers in many different ways. Lin [15] concludes that innovation is any practices that are new to organizations, including equipments, products, services, processes, policies and projects. Innovation can be done in many different areas in enterprises, including product offerings, processes, organizations, value capturing, customer experience, market presence, networking, and in the brand [12].

2.2 Product Innovation Defined

According to Kotler [16], a product is anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a need or a want. Thus a product may be a physical good, service or ideas. With regard to this study, products refer to various products and services that banks offer to their customers. Product innovation is the creation and subsequent introduction of a good or service that is either new or improved on previous goods or services [17]. A product innovation is "the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics [18]. Product innovations have a market focus and are primarily customer driven. Grawe [19] states that a new product can be developed by combining current technologies and using them differently or using radical technologies. In another study, Polder et al. [20] believe that a product innovation is introducing new products or making significant improvements in the current products.

2.3 Brief History of Nigerian Breweries Plc

Nigerian Breweries Plc is considered to be the pioneer in the Nigerian brewery industry. Incorporated in 1946, headquartered in Lagos, NB is today the largest brewing company in Nigeria and the second largest in terms of market capitalisation. In June 1949, first bottle of STAR lager beer rolled off its Lagos Brewery bottling lines. Nigerian Breweries has a product portfolio made up of both the alcoholic and the non-alcoholic products. In total, there are 20 brands sold in over 53 SKUs across lager, cider, malt, stout and soft drinks. NB is the market leader in lager and malt and a challenger in Stout. Major competitors for NB in these categories include Guinness Nigeria and AB InBev. Guinness Nigeria has brands like Guinness, Harp, Dabic, Satzenbrau, Smirnoff, Snapp and Orijin. AB InBev recently acquired SAB Miller that operates:

- i. Pabod Breweries Ltd (PBL) in Port Harcourt Rivers State,
- ii. Intafact Beverages Ltd (IBL) in Onitsha Anambra State
- iii. International Breweries Plc (IBP) in Ilesha in Osun State
- iv. Beverage Management Services (BMS). The Spirits business based in Port Harcourt, Rivers State.

The company is operating in Nigeria as International Breweries AB Inbev. The above named companies were recently merged into one. AB InBev is a new major competitor with regional brands like Hero, Trophy Lager, Castle Milk Stout, Grand Malt, Eagle and Beta Malt. AB InBev in addition to the above mentioned facilities recently completed and inaugurated a US\$250 million factory in Agbara, Ogun State on 28 August 2018. The challenging business environment, coupled with increased competition from incumbent operator Guinness Nigeria and the new industry challenger, Anheuser-Busch InBev (AB InBev), affected the performance of Nigerian Breweries (NB) in recent years. The company's performance in Q3 2018 slowed down compared with the corresponding period in 2017. Specifically, increase in cost of operations, weak consumers' purchasing power, substantial one-off cost due to rightsizing exercise and new tariff regime are major factors that affected the performance of the company during the period.

2.4 Empirical Review

Previous studies on the relationship between product innovation and organizational performance have conflicting results. For example, Nham, Nguyen, Pham and Nguyen [21] investigate the impacts of innovation on firm performance. Structured questionnaires was administered to directors, CEO of those firms during April and May, 2014. Analysis methodologies of reliability, factor analysis and regression are utilized for the study. The result demonstrate that there are positive effects of process, marketing, and organizational innovations on firm performance. In a similar study, Kalay and Lynn [22] explore the relationship between strategic innovation management practice and organizational performance in Turkey. Results show that innovation strategy, organizational structure and innovation culture significantly increased firm innovation performance. Also, Rosli and Sidek [23] evaluate the impact of various innovation dimensions on the performance of SMEs. A total of 284 samples were collected from SMEs in the food and beverage, textiles and clothing and wood-based sub-industries throughout Malaysia. The data were analysed using a hierarchical regression analysis. Result revealed that product innovation and process innovation influenced firm performance significantly.

Gunday et al. [11] explore the effects of product, process, organization and marketing innovations on different aspects of firm performance in Turkey. Result reveals that product, organization and marketing innovations have positive effects on firm performance in manufacturing industries. In another study, Artz et al. [24] examine the impact of patents acquired and product innovations on firm performance in different industries of the U.S. and Canada. Their findings showed that product innovation had a significant impact on firm performance. In the same vein, Cho and Pucik [25] examine the relationship between innovativeness, quality, growth, profitability and market value at the firm level in the U.S. finance industry by using structural equation modeling method. Result indicates that innovativeness mediates the relationship between quality and growth, quality mediates the relationship between innovativeness and profitability. The studies of Matear, Gray and Garrett [26], Prajogo et al. [27], Wu, Mahajan, and Balasujbramanian [28] and Calantone et al. [29] also affirm that firm innovativeness is positively related to firm performance.

However, the finding of Subramanian and Nilakanta [30] is contrary to the previous studies that positive relationship exist between product innovation and organizational performance. In a similar study, Adhiambo [31] investigates the effect of product innovation on financial performance of commercial banks in Kenya. This study adopts explanatory research design in which a population sample of 106 senior and branch managers from nine commercial banks was taken using the census method. Data was collected using research questionnaires and face-to-face interviews and secondary data was obtained from 2013 audited annual financial statements of commercial banks. Analyses were conducted through descriptive statistics and Ordinary Least Square technique to estimate a multiple regression equation. Result reveals that product innovation has no relationship with the financial performance of banks.

3. METHODOLOGY

3.1 Research Design

A research design is a procedure or process that guides the researcher in providing answers to research questions and meeting desired objectives. This study adopted descriptive research approach for the study.

3.2 Sampling Method and Sample Size

For the purpose of this research work, the researcher adopted purposive sampling technique to select 12 staff from production department, 13 staff from quality assurance department, 19 staff from packaging and engineering department, 11 staff from logistic department and 15 staff from marketing department respectively, totaling 70 respondents as a sample size for the study.

3.3 Data Collection Instruments

The research instrument was questionnaire designed for the study. The response format was in Likert format with responses ranging from strongly agree (5) to strongly disagree (1). In order to establish the reliability of the research instrument, a test - retest method was used. In confirming the facts and contents validities of the instrument, it was given to experts for verification.

3.4 Method of Data Analysis

The research data was statistically analyzed by means of the Statistical Package for Social

Science (SPSS). The data analyses involved both descriptive and inferential statistics.

4. DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Distribution of Respondents by Product Innovation

Table 1 reveals that most respondents agreed that in comparison with competitors, their company has introduced more innovative products and services during past 5 years, which was ranked highest (WMS = 3.94). Others in the rank orders include; new products and services in their company often take them up against new competitors, (WMS = 3.93), they affirmed that their company manage to cope with market demands and develop new products quickly (WMS = 3.93), they also claimed that their new products and services are often perceived as very novel by customers (WMS = 3.85), they also confirmed that their firm manages to deliver special products flexibly according to customers' orders (WMS = 3.67), they agreed that their firm continuously improve old products and raise quality of new products (WMS = 3.59), they also claimed that their firm continuously modify design of our products and rapidly enter new emerging markets (WMS = 3.57), they affirmed that in new product and service introduction, their company is often first-to-market (WMS = 3.50) and they confirmed that their firm constantly emphasize development of particular and patent products (WMS = 3.20) respectively. This implies that Nigerian breweries Plc leverage on innovation strategy, which made the company to wax stronger in spite of challenging business environment, coupled with increased competition from incumbent operator Guinness Nigeria and the new industry challenger.

4.2 Distribution of Respondents by Sales Volume

Table 2 reveals that majority of respondents agreed that over the last year, their business has generated a high sales revenue, which was ranked highest (WMS = 4.01). Other perceptions of sales volume in the rank order include, current turnover is very much higher than that of other businesses (WMS = 3.99), over the last year, their business has achieved rapid growth mentors give them (WMS = 3.98), over last year, their business has fully met our management team's financial expectations (WMS = 3.97), over the last year, their business has been very successful (WMS = 3.89), over the last year, the

performance of their business has been very satisfactory (WMS = 3.87) and their current profitability is very much higher than that of other comparable businesses (WMS = 3.76).

4.3 Distribution of Respondents by Customer Satisfaction

Table 3 presents the distribution of respondents by customer satisfaction. It was revealed that satisfaction of customers is our priority was ranked highest among the respondents (WMS = 4.02). Other opinions about customer satisfaction in the rank order include; our new products and services are often perceived as very novel by customers (WMS = 3.99), we strongly involve our

customers in our research and development processes (WMS = 3.96), we consider our relations with customers to be excellent because we maintain genuine partnerships with them (WMS = 3.95), we have long-term partner relationships with our customers (WMS = 3.86) and we deal with customers' suggestions or complaints urgently and with utmost care (WMS = 3.76). This implies that customer satisfaction does not come about in isolation, as it is dependent on long-term partner relationships with customer, involving customers in research and development processes, and handling customers' suggestions or complaints urgently and with utmost care.

Table 1. Distribution of respondents by product innovation

Statement	Weighted Mean Score (WMS)	Rank
In new product and service introduction, our company is often first-to-market	3.50	8 th
Our new products and services are often perceived as very novel by customers.	3.85	4 th
New products and services in our company often take us up against new competitors.	3.93	2 nd
In comparison with competitors, our company has introduced more innovative products and services during past 5 years.	3.94	1 st
We constantly emphasize development of particular and patent products.	3.20	9 th
We manage to cope with market demands and develop new products quickly	3.91	3 rd
We continuously modify design of our products and rapidly enter new emerging markets.	3.57	7 th
Our firm manages to deliver special products flexibly according to customers' orders	3.67	5 th
We continuously improve old products and raise quality of new products.	3.59	6 th

Source: Author's field survey

Table 2. Distribution of respondents by sales volume

Statement	Weighted Mean Score (WMS)	Rank
Over the last year, our business has generated a high sales revenue	4.01	1 st
Over the last year, our business has achieved rapid growth	3.98	3 rd
Over the last year, the performance of our business has been very satisfactory	3.87	6 th
Our current turnover is very much higher than that of other businesses	3.99	2 nd
Over the last year, our business has been very successful	3.89	5 th
Our current profitability is very much higher than that of other comparable businesses	3.76	7 th
Over last year, our business has fully met our management team's financial expectations	3.97	4 th

Source: Author's field survey

Table 3. Distribution of respondents by customer satisfaction

Statement	Weighted Mean Score (WMS)	Rank
We consider our relations with customers to be excellent because we maintain genuine partnerships with them.	3.95	4 th
We have long-term partner relationships with our customers.	3.86	5 th
Satisfaction of customers is our priority	4.02	1 st
Our new products and services are often perceived as very novel by customers	3.99	2 nd
We deal with customers' suggestions or complaints urgently and with utmost care.	3.78	6 th
We strongly involve our customers in our research and development processes.	3.96	3 rd

Source: Author's field survey

4.4 Distribution of Respondents by Customer Preference

Table 4 presents the distribution of respondents by customer preference. Majority of respondents agreed that they have very good knowledge about the types of product innovations that our customers will accept or reject, which was ranked highest among the respondents (WMS = 4.12). Other opinions about customer preference in the rank order include; developing newness for current products leading to improved ease of use for customers (WMS = 4.10), we have plenty of time to develop and implement product innovations that will be preferred by customers (WMS = 4.08), customers understand the features of our products well enough to evaluate the brands (WMS = 3.98), preferred brand of product helps customers attain the type of life they strive for (WMS = 3.72) and if customers received information that was contrary to their preferred product, they would still keep their preferred brand (WMS = 3.72). This implies that changes in taste and preference of consumers necessitate product innovation.

4.5 Testing of Hypothesis

Research Hypothesis One:

H_{01} : Product innovation has no significant effect on sales volume.

Alpha value: 5%

Decision rule: Reject H_0 if significant value is less than α . Otherwise, do not reject H_0 .

The above Pearson chi square result in Table 5, $\chi^2 (24.76) = 0.000 < 0.05$ is said to be statistical significant since the statistical value (0.000) is less than the alpha value (0.05). Therefore, null

hypothesis would be rejected and we conclude that product innovation has significant effect on sales volume. This study is consistent with Nham, Nguyen, Pham and Nguyen [21], Kalay and Lynn [22], Rosli and Sidek [23] and Gunday et al. [11] that product innovation is a major predictor of organizational performance.

Research Hypothesis Two:

H_{02} : Product innovation has no significant relationship with changes in consumer taste and preference.

Alpha value (α) = 0.05

Decision Rule: Reject null hypothesis if P value is lesser than the alpha value. Otherwise, do not reject null hypothesis.

It was so obvious from the Table 6 above that the result was statistical significant as the p value $0.000 < \alpha$ value (0.05) which makes the null hypothesis to be rejected and we conclude that There is significant relationship between product innovation and changes in consumer taste and preference. This implies that Nigerian Breweries have very good knowledge about the types of product innovations that its customers will accept or reject.

Research Hypothesis Three:

H_{03} : There is no significant relationship between product innovation and consumer satisfaction.

Alpha value: 0.05

Decision rule: Reject H_0 if the significance value is less than the confident level. Otherwise, do not reject the H_0 .

Since the significance value (0.000) of the Chi-Square test result in the above Table 7 is less than the alpha value (5%), the result is said to be statistical significant and H_0 would be rejected. So, we conclude that there is significant relationship between product innovation and consumer satisfaction. This implies that Nigerian Breweries is steadfastly maintain long-term partner relationships with its customers, involving its customers in research and development processes, and handling customers' suggestions or complaints urgently and with utmost care.

Deduction to be made from this finding is that product innovation is a strong tool of sustainable competitive advantage in an increasingly changing environment. Thus, it leads to product and process improvements, makes continuous advances that helps firms to survive, and allows firms to grow more quickly than non-innovators. This study is in contrary to the findings of Subramanian and Nilakanta [30] and Adhiambo [31] that product innovation is a weak predictor of organizational performance.

Table 4. Distribution of respondents by customer preference

Statement	Weighted Mean Score (WMS)	Rank
We have very good knowledge about the types of product innovations that our customers will accept or reject	4.12	1 st
We have plenty of time to develop and implement product innovations that will be preferred by customers	4.08	3 rd
Developing newness for current products leading to improved ease of use for customers	4.10	2 nd
Customers understand the features of our products well enough to evaluate the brands	3.98	4 th
If customers received information that was contrary to their preferred product, they would still keep their preferred brand.	3.67	6 th
Preferred brand of product helps customers attain the type of life they strive for.	3.72	5 th

Source: Author's field survey

Table 5. Research hypothesis result

Chi square test				
Statistical test	Value	Degrees of freedom	Significant value	Remarks
Pearson chi-square	24.760	1	0.000	Significant

Table 6. Analysis of variance (ANOVA)

Statistical Model	Sum of Squares	Degree of freedom	Mean Square	F	S. value
Regression	323.772	1	323.772	246.491	0.000
Residual	185.207	68	1.314		
Total	508.979	69			

Table 7. Chi-square test result

Statistical test	Value	Degrees of freedom	Significance value
Pearson chi-square	108.741	2	0.000***

***:1%, **:10%, *:5%

5. CONCLUSION AND RECOMMENDATION

Innovation is widely regarded as one of the most important sources of sustainable competitive advantage in an increasingly changing environment. This study examined the effect of product innovation on the performance of manufacturing sector with particular reference to Nigerian breweries Plc. purposive sampling technique was adopted to select 70 respondents from various departments as a sample size for the study. Structured questionnaire was employed to collect the data, while weighted mean score, chi-square and analysis of variance were used to analyze the data.

The study established that product innovation has significant effect on sales volume. This connotes that Nigerian breweries has been experiencing high sales revenue since implementation of product innovation strategy. The study also affirmed that positive relationship exist between product innovations, customer satisfaction, changes in consumer taste and preference. This indicates that Nigerian breweries Plc leverage on innovation strategy, which made the company to wax stronger in spite of challenging business environment, coupled with increased competition from incumbent operator Guinness Nigeria and the new industry challenger. The study therefore concluded that product innovation is an alternative paradigm to organizational performance in a global competitive environment. Subsequently, the study recommended that management of manufacturing organizations should leverage on product innovation, as this type of innovation is found to be important instrument for achieving sustainable competitive power.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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