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PRODUCT INNOVATION AND PERFORMANCE OF LARGE MANUFACTURING FIRMS IN KENYA: A CASE OF BAMBURI CEMENT LIMITED (LAFARGE HOLCIM)

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ABSTRACT

The increasing demand for cement in Kenya has attracted new entrants into the market, increasing competition amongst producers of cement. This study finds out the role of product innovation on performance of large manufacturing firms, a case study of Bamburi Cement Limited. The study was guided by Innovative Firm theory, theory of Dynamic Capability, Resource Dependence Theory and the Institutional Theory. This study adopted a descriptive research design. The study's population entailed all workers of BCL serving in 6 departments in the Corporate Office, Industrial Area and also in Athi River. The departments include Innovation and Technical Services Department, the Commercial Department, the IT Department, Human Resource Department, Production & Maintenance Department and the Finance Department. A total of 470 employees formed the target. The Yamane formula (1967) was applied to obtain the sample for the study. From the 470 workers 216 of them were to be obtained from the targeted departments. A Stratified random sampling was applied for proportionately selecting the 216 sample of employees from the population targeted. A questionnaire was used to collect primary data. Qualitative data was analysed using content analysis and presented in different themes. The study concluded that there exists a positive relationship between product innovation strategy and performance of large manufacturing firms. Therefore, large manufacturing firms should continually embrace product innovation as this strategy provides a framework for creating new products and improving the performance. Manufacturing companies need to implement policies that encourage a process innovation culture.

Keyword: Product, innovation, research and development, performance.

INTRODUCTION

Background to the Study

Understanding the relation between innovation strategies and performance in both large and small firms is relevant for many scholars, decision-makers and executives of big and micro enterprises all across the globe (Kemp, 2016). The fundamental basis is that firms should be encouraged to innovate leading to better economic performance; higher growth, increased sales, more jobs and higher wages (Sirelli, 2017). Innovativeness is one of the fundamental instruments of growth to enter into new markets, increase the existing market share and to provide the company with a competitive edge (Gunday, 2018).

Innovation strategy describes the work of innovation and invention and gives the direction for the many innovation implementations, however, the role of innovation in assisting companies to attain objectives with regard to growth is often not clear and the revenue development from innovation is not sufficient, except when managed with great precision (Oslo Manual, 2015). Innovations give firms strategic direction to overcome the challenges they go through while trying to attain justifiable competitive advantage (Kuratko, 2015).

At the global level, innovation strategies have been accorded a core focus. Companies and states which innovate constantly, significantly contribute to growth of their economies. It is therefore not by chance that nations like Japan, USA and other European nations that portray the leading investment capacity on R&D or patent activity are the front-runners in economic growth ladder (Ahmed & Shepherd, 2019). Olsen (2015) carried out a survey in Malaysia where he discovered that the demand of customers, market patterns, the vision and the mission of a company were the major aspects that affected the use of practices for innovation. Stress on activities for R&D and Knowledge management impacted greatly on performance of companies as practices for innovation methods. Malaysia's Commercial banks have continued to be effective in the use of practices for innovation this far, there's necessity for focusing on the manner in which their strategy of expansion impacted on how the banks performed, and the manner in which globalization impacted on their competitiveness in the market. This gave the banks room for attaining the complete advantage of using approaches for practices of innovation.

Product Innovation

Danneels (2016) identifies that innovation of a product is connecting technology and client competencies. Innovation of a product alludes to the meaningfulness and novelty of fresh products presented in the market on time. It deals with introducing to the market fresh or significantly enhanced services or goods. Unai (2016) identified innovation of a product as the frequent introduction of valuable, greatly enhanced current products or completely fresh products.

Bamburi Cement Limited

It is a branch of Lafarge Holcim. The company was established in the year 1951 having situated its 1st plant in Mombasa and in the year 1954, it begun production. It is Kenya's biggest manufacturer, enjoying domestic control as far as the share of the market and production are concerned (Kenya cement industry, 2012). It entails 3 active branches: Lafarge Eco Systems Ltd, Bamburi Special Products Ltd, Hima Cement Ltd. Additionally, it owns the world renowned quarry rehabilitation, Haller Park. The company has various products of top-quality in the market, comprising Nguvu brand cement, Power Max, Bamburi Blox and Power Plus.

Within the East African Cement Sector (2012), the regional share of the market approximations clearly indicate that Bamburi Cement Ltd has continued to lose the share of the market to fresh entrants. Their share tended to be 55 per cent in the year 2005, 40.5 per cent in the year 2011 and estimated as 38 per cent in the year 2015. The pattern is quite perturbing, for purposes of survival and continuing to enjoy domestic control in the share of the market and production, BCL is needs to come up with and adopt fresh strategies and technologies. High production costs as a result of recurrent fluctuations in oil and fuel prices, costs of stockholding and competition are some of the problems that Mwanzia (2018) highlighted as affecting BCL.

Statement of the Problem

Although innovation is very evident in most companies, the manufacturing industry faces a myriad of problems such as overcapacity and price wars, poor corporate governance, inadequate legislative and regulatory framework and

financially weak manufacturing firms. Innovation strategies can be proven by the number of new products released in the market every time, improvement of existing products, improved marketing strategies and also improved management tactics employed. The motive behind these numerous innovation activities is to improve firm competitive performance in various aspects such as increase of profits, to increase market share, and reduce production costs.

Kenyas sector of manufacturing grew by 3.2 per cent in the year 2015, by 3.5 per cent in the year 2017 and contributing therefore drawing companies to compete in the market 10.3 per cent to GDP (KNBS, 2019). The increasing demand for cement within the area has attracted new entrants into the market, increasing competition amongst producers of cement. Even after the afore-mentioned growth, there's an adverse impact on the share of the market for BCL resulting to reduced sales and profits reduction. The industry's net profit margin averaged 10 per cent in 2018 down from 15 percent in 2014. Cement prices have fallen from an average of $140 per ton in 2014 to an average of $100 in 2018 (AIB, 2019). The entrance of firms like the Devki Group's National Cement firm in Nakuru, the Indian-based Sanghi group of company in the County of Pokot, as well as other participants within the area over 5 years ago has resulted to increased rivalry that has resulted to constant decline in the prices of cement (Dyer Blair, 2018). With new competition, the market-share of the dominant player dropped to 32.6% by 2018 (Economic survey, 2019).

At international level, studies that focused on the relation between performance and innovation proved a positive relationship. Daisy (2016) discovered, innovation, positively and significantly impacted on the satisfaction of a customer as well as their retention in Vietnam. For Nigeria, Oluseye (2017) discovered, strategies of innovation positively impacted on creation of fresh and expanding share of the market for telecommunication sector companies. Regionally, Letangule and Letting (2017) carried out a research on the impact of strategies for innovation on firm's performance in Kenyas sector of telecommunication. The conclusion from the research was that the strategies of innovation led to enhanced performance of organizations amongst telecommunication companies. Mathenge (2018) surveyed the impact of innovation on competitiveness of Kenyan SMEs. The conclusion from the research was; financial innovation had a positive impact on competitiveness of SMEs firms to a great extent.

Despite the numerous benefits of innovation; very few researches have been conducted in the sector of manufacturing which is a very important area of study in Kenya. This study therefore sought to find out the role of product innovation strategies on performance of large manufacturing firms, a case study of Bamburi Cement Limited.

Objectives of the Study

The objective of this study is to assess the relationship between the strategy of product innovation and performance of large manufacturing firms. A case study of Bamburi Cement Limited.

LITERATURE REVIEW

Theoretical Literature Review

Theory of the Innovative Firm

The theory was written by Adner, (2017) and is the anchor theory to this study. This is because a firm's function is to transform productive resources to services and goods which are possible to commercialize. A company can achieve that through innovation. Thus, superior performance outcomes of an organization come from innovative business to produce products that are of top-quality at a reduced cost (Lazonick, 2014). Companies that are innovative have the capacity of transforming useful resources to reduce costs and develop top-quality services and goods resulting to a benefit for clients and other players within the economy (Lazonick, 2014).

This theory is essential to this research because innovative companies have the capacity of using innovation towards achieving differentiation through providing different services and goods to clients which are distinctive. It is also appropriate to the study's objective on the impact of innovation of processes on firm's performance because constant enhancement of methods and processes as innovation results to diversity that leads to augmented competitiveness of companies in innovative companies. The theory is important in describing the role of innovation and the impact on competitiveness of a company through generation of superior services and products within the market with enhancement of processes. It confirms the essence of innovation of processes in competitiveness of companies and performance of an organization.

The Dynamic Capability Theory

This theory was established by Pisano and Shuen (1994). The theory describes how companies accomplish and maintain performance and competitiveness grounded on processes which occur in a company to fit the volatile and dynamic environment. This theory's emergence was required as a result of the limitations of the action-based and resource-based theories on handling active economies. The paradigm of dynamic capacity embraces knowledge and learning, innovation, entrepreneurship and management of change. The capacity of a company to change with market changes by innovation is essential for firm's competitiveness. It is contended that the vital impulse which enables capitalism comes from innovation of fresh goods, fresh production methods, fresh markets and fresh industrial organization forms (Teece, 2014).

This theory supports the study's objective on the impact of price and promotion innovation on organizational performance. Innovation of promotions entails the execution of a fresh marketing technique comprising significant modifications in the packaging and design of a product, placement of a product, product pricing or promotion. The method accentuates the firm's capability in renewing competence and also integrating resources and reconfiguring them to create and match market changes by innovation. The theory enlightens the research on the importance of dynamic capacities of a company which are important in accomplishing competitiveness within the context of a dynamic unstable environment.

Resource Dependence Theory

Theory was developed by Pfeffer and Salancik (1970). The theory is based on the premise that organizations acquire power when they possess resources that are valued by other organizations. The resource dependency theory draws attention to the firm's internal environment as a driver for organizational performance and emphasizes on the resources that firms have developed to compete in the environment. Furrer (2018) changed the focus of inquiry from the structure of the industry, to Structure-Conduct-Performance (SCP) paradigm and the Porters five forces model to the firm's internal structure, with resources and capabilities. Researchers subscribing to the resource dependency theory argue that only strategically important and useful resources and competencies should be viewed as sources of good organizational performance (Hessels & Terjesen, 2015).

This theory studies on how the external resources of an organization affect the operation and behavior of an organization. It is based on the notion that environments are the source of scarce resources, and organizations are dependent on these resources for survival. The emphasis on external resources and careful articulation of both strategic and tactical management in an organization, is a hallmark of resource dependence theory (Davis & Cobb, 2017). The theory is relevant to the study in linking innovation strategy as a rare resource to organisational performance of a firm. It argues that when a firm possesses rare resources which cannot be imitated by other firms, it has the potential to perform better than the other firms. The same can apply to unique strategies which other firms cannot imitate.

Institutional Theory

Selznick (1949) being the founder of institutional theory stated that an organization exists in an institution where its structure is influenced by external factors that make it adaptive to the environment it operates. Scott (2001 as cited in Oliveira, & Martins, 2010) states that Institutional theory views an organization as an element in the institutional environment in which it operates within other industries and it helps an organization shape itself in its structure and actions. According to Dimmaggio and Powel (1983) Institutional theory, organizational decisions are not based purely on efficiency goals, but also on social and cultural factors and concerns for legitimacy. Institutions are supported by cultures, structures, and routines and operate at multiple levels.

Lundvall (2018) stated that, there is a need to understand how the core of the innovation system is embedded in the wider set of institutions that shape people and relationships between people. Education systems, welfare regimes, labour markets and financial markets may be more or less supportive to the micro-structure. The core of the innovation system may evolve at a more rapid rate than the wider setting, making radical reform necessary. On the other hand, there is a lot of slack and incompetence in the micro-structure and changes in the wider setting may be helpful to overcome such. Ottenbacher and Harrington (2015) study reveal that, organization top managers and the environment that an institution operates, influences strategic decisions, organizational and process innovations (Pinto & Silva, 2016).

Empirical Literature Review

Product innovation is described as the use of a good or a service that is meaningfully improved with regard to its characteristics; including significant improvements in practical requirements, elements and materials, integrated software, user friendliness or other functional characteristics (Oslo, 2015). New product success eventually is determined by market approval. Firms may build confidence about their advantageous inventions, but technology prowess does not assure market success. Whether a technological invention can win customers depends majorly on whether they award significant profits to customers or typically distinguish the focal organization from its competitors (Yangchuan, 2018).

Kemoli (2016) explored innovation management practices and performance of textile manufacturing firms in Turkey. An explanatory design was employed in a sample of 25 manufacturing firms. Both primary and secondary sources of data were used and analysis was done using descriptive statistics and correlation analysis. The results discovered a strong and positive correlation among the combined impact of strategic innovation indicators and performance indicators. These incorporate critical enhancements in mechanical determinations, segments and materials, or ease of use among different capacities (Tavassoli & Karlsson, 2015). Product innovation strategies are majorly driven by advancement in technologies, ever changing customer taste and preferences, shortening item cycles and expanding rivalry.

A study by Slivko (2017) on advancement Systems among German Firms that included three development procedures: refraining from advancement, presentation of items that are known in the market yet new to the firm, or presenting market oddities found that IP assurance strategy and antitrust approach, can strengthen each other in advancing advancement since they increase firms' incentives to introduce market novelties. Tavassoli and Karlsson (2015) also analyzed innovation strategies of firms in Sweden for the period between 2002 and 2012 utilizing sixteen advancement techniques, which were made out of Schumpeterian four sorts of developments in addition to different blends of the four sorts and found that organizations are not homogenous in picking advancement systems; rather, they have an extensive variety of inclinations with regard to advancement procedure. The specialists additionally found that organizations have different development procedure inclinations.

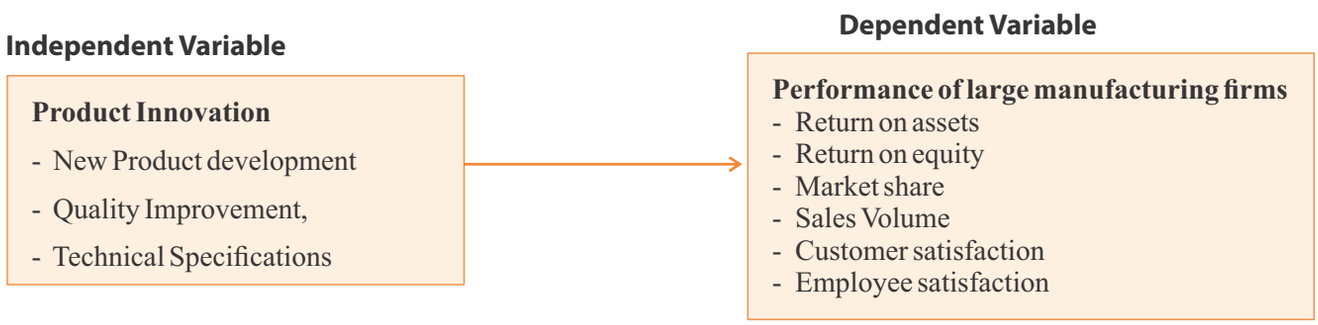
Atalay, Anafarta and Sarvan (2017), carried out a research on Turkeys senior management of one hundred and thirteen firms in the automotive sector that indicated, innovation of a product impacted significantly and positively on performance of a company. Rosli and Sidek (2016) assessed the effect that innovation has on Malaysia's SMEs in manufacturing. The research identified that innovation facets of a product have an impact and they are linked to the performance of wine companies. The purpose of product innovation is appealing to fresh clients. Firms transform their current products or bring in fresh products based on their fresh clients. As a result of the products short life-span, it leads firms to embrace product innovation through introducing or improving fresh products (Duranton& Puga, 2018).

Ghana, Gokkaya and Ozbag (2017) during their research, discovered that a sizeable effect on performance of an organization was through innovation. The efforts of an organization to develop products and processes improve the firm's performance counting qualitative and quantitative performance. There are several studies which have been carried out in the nation of Kenya towards showing the relation between innovation of a product and performance of a company. Karanja (2014) carried out a research on the effect of strategies of innovation on competitiveness of United Bank of Africa. Outcomes identified that incorporation of innovation strategies of a product facilitated UBA to provide a distinguished product. Letangule and Letting (2012) survey on innovation within the sector of telecommunication identified that innovation of a product impacted positively on the company's profitability. Ngirigacha & Bwisa (2014) carried out a research on the bearing of business innovation on the market competitiveness of SMEs in the town of Thika. The outcomes given prove a notable and positive relation between innovation of a product and performance of a firm. Soi (2016) research on the impact of strategies of innovation on organizational performance in Kenya's sector of telecommunication reveals that innovation of a product enhanced performance of Kenya's telecommunication enterprises.

Hypothesis Testing

H_{01}: The strategy of product innovation has no statistical significance on performance of large manufacturing companies.

Conceptual Framework



RESEARCH METHODOLOGY

Research Design

A research design is a framework for data collection and analysis to answer study research questions (Bryman & Bell, 2011). Orodho (2008) asserted that decisions regarding what, where, how much, by what means concerning an inquiry or research study constitutes a research design. Cooper and Schindler (2011) and Kothari (2010) suggested that a research design constitutes the blue print for collection, measurement and analysis of the data. A research design enables the researcher in allocation of limited resources by posing crucial choices in methodology (Cooper & Schindler, 2011). This refers to a plan used to carry out the study while fully controlling elements which might interfere with results validity (Sekeran, 2009).

Target Population

The study's population drew from the workers of BCL serving in six departments in the Corporate Office, Industrial Area and also in Athi River. The departments included Innovation and Technical Services Department, the Commercial Department, the IT Department, Human Resource Department, Production & Maintenance Department and the Finance Department. Total of 470 employees formed the target of this study as illustrated in Table 3.1.

Table 3.1 Study Population

Departments	Top Management	Middle Management	Low Management	Total
Finance department	8	24	42	74
Human Resource department	6	18	40	64
Production & Maintenance department	4	12	60	76
Commercial Department	8	30	124	162
IT Department	4	10	40	54
Innovation & Technical Services	2	8	30	40
Total	**32**	**102**	**336**	**470**

Sampling Design

The Yamane formula (1967) was applied to obtain the sample for the study.

$$n = \frac{N}{1+N(e)2}$$

Based on the formula above, n describes the size of the sample; N describes the overall target population, and describes the level of significance or the error. The conventional 5% level of significance was employed for purposes of balancing between committing Type I & II errors. A 5 per cent level of significance was applied to guarantee an outcome that is quite accurate the sample.

n = 470/ [1+ (470x 0.0025)]
= 470/2.175
n = 216

Table 3.2 Sample Size

Departments	Top Management	Middle Management	Low Management	Sample Size
Finance	4	10	20	34
Human Resource	2	8	19	29
Production & Maintenance	2	8	25	35
Commercial	6	21	47	74
IT	2	5	18	25
Innovation & Technical Services	1	3	14	19
Total	**17**	**55**	**143**	**216**

From the 470 workers, 216 of them were obtained from the targeted departments. A Stratified random sampling was applied for proportionately selecting the 216 sample of employees from the population targeted. Kothari (2011) posited that the sample size should neither be too big nor too small but optimum which achieves efficiency, flexibility, reliability and representativeness. A small sample size is unreliable while a large sample size is reliable and precise but too expensive in terms of resources. Statistically, for the central limit theorem to hold, a sample of greater than thirty is needed for normal theory approximations for measures such as standard error of the mean (Filipavicurte, 2006). Kothari (2011) posited that the sample size increases with the degree of statistical confidence and the precision required. Most studies adopt a confidence level at 95% and a precision of +/-5% (Gupta, 2012). This study adopted a confidence level at 95%.

Data Collection Instruments

Kombo and Tromp (2011) defined data collection as the gathering of information to serve or prove some facts. The researcher collected both primary and secondary data. The primary data was obtained by administering a questionnaire to the respondents while the secondary data was collected from published sources such as the internet, library and research done by other scholars. After data collection, the researcher used various methods of estimating non- response. There are three methods that are commonly used: comparison with known values for the population, subjective estimates and extrapolation.

Data Collection Procedure

After obtaining permission from the University, the researcher went to the BLC head offices for purposes of obtaining permission for conducting the research. In addition, a license for collecting data was sought from National Commission for Science, Technology & Innovation (NACOSTI). The researcher developed a budget for materials, which were employed in the course of collecting data, and bought those materials prior to the real exercise of collecting the data.

The time and the date for data collection were planned carefully. The researcher then distributed questionnaires to the participants targeted via email. Email data collection was used in this study as per the regulations put by the government during this period of Covid 19 pandemic. According to Walker, (2013) use of technology in collection of research data is more efficient and economical. Unlike interviews in real time, participants can respond to email interview prompts at their own convenience at a time that is suitable solely to them (Gibson, 2014).

Data Analysis

Zikmund (2012) stated that data analysis is the application of reasoning to understand the data that has been gathered with the aim of determining consistent patterns and summarizing the relevant details revealed in the investigation. Data processing entailed editing, classification and tabulation of data collected so that they were subjected to analysis (Kothari, 2010). Data entry converted information gathered by secondary and primary methods to a medium for viewing and manipulation.

This study collected both qualitative and quantitative data. The gathered data from primary sources was organized systematically in a suitable way for purposes of facilitating analysis. The process of analyzing data entailed preparing the data collected, and then coding, editing and cleaning it for purposes of facilitating the processing of that data. The inferential and descriptive statistics was applied for analyzing the data. Different statistical processes like the measures of dispersion and central tendencies as well as frequencies were calculated with help of Statistical Package for Social Science (SPSS Version 23).

The presentation of outcomes was made through the use of charts, tables and graphs for understanding convenience that enabled interpretation of generated findings and making recommendations based on the obtained findings. By use of the empirical model, the multiple regression analysis was used in determining the relation amongst the variables used in the study.

The equation demonstrating the algebraic expression of multiple regression model of the form below was used;

$$\mathbf{Y} = \beta_0 + \beta_1 \mathbf{X}_1 + \mathbf{e}$$

In which **Y**= Performance indicators of the large manufacturing companies (dependent variable).
In which:

β_0 = Constant that describes performance without including independent variables
$\beta_{1,2,3,4}$ = Coefficient of X_1, X_2, X_3 and X_4
$\mathbf{X}_{1\text{-}K}$ = Independent variables are,
$\mathbf{X}_1$ = Product innovation strategy
e = Error Term
$\beta_{1\text{-}k}$ = Regression coefficients- describe how much amount of Y is changed for a change in one unit of independent variables.

RESULTS AND DISCUSSION

Response Rate

The study targeted a sample size of 216 respondents, out of which 184 filled in and returned the questionnaires making a response rate of 85.2 % as shown in Table 4.1. Mugenda and Mugenda (2003) assert that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the response rate was considered to be excellent.

Table 4.1: Response Rate

Response	Frequency	Percentage
Responded	184	85.2
Not responded	32	14.8
Total	**216**	**100**

Participants were required to indicate their level of agreement with the following statements assessing on the extent to which the organization applies product innovation strategies. The results are presented in Table 4.2.

Table 4.2: Extent in application of product innovation strategies

Statements	Mean	Std dev
Our organization increases the quality of manufacturing in the elements of the existing product	3.89	0.94
Our organization develops novelty for present products resulting to enhanced ease of use for clients	3.94	0.78
Our organization develops fresh products that have technical stipulations	3.83	0.82
Our organization existing ones. develops fresh products that have components which differ totally with the	4.34	0.47
Our organization develops fresh products with materials that differ totally from present ones	3.61	1.13
Our organization develops fresh products to enhance the satisfaction of clients	4.16	0.77
Our organization lowers the cost of manufacturing materials of existing products	4.15	0.67
Our organization increases the quality of manufacturing materials of existing products	4.18	0.69

From the study findings, majority of the respondents agreed that Bamburi Cement Limited develops fresh products that have components which differ totally with the existing ones (M = 4.34 SD=0.47), the organization also increases the quality of manufacturing materials of existing products (M = 4.18 SD=0.96) Bamburi Cement develops fresh products to enhance the satisfaction of clients (M=4.16 SD=0.77) and the study also established that the management lowers the cost of manufacturing materials of existing products (M=4.15 SD= 0.67).These findings are in line with those of Tushman and Reilly (2009) who revealed that new products innovation can help an organization stay ahead of competition as market trends shift.

Further, respondents agreed that the organization develops novelty for present products resulting to enhanced ease of use for clients (M=3.94 SD=0.78), the organization increases the quality of manufacturing in the elements of the existing product (M=3.89 SD=0.94) and develops fresh products that have technical stipulations (M=3.83 SD=0.82) and also that the organization develops fresh products with materials that differ totally from present ones (M =3.61 SD =1.13). The results go hand in hand with study conclusion by Maktoba (2015) who contend that Product innovation can generate significant gains in product quality and service levels.

Organisational Performance

Table 4.3 presents the information related with organisational performance. This information was obtained from audited books of accounts from 2015 to 2019.

Table 4.3: Organisational Performance

Metric	2019	2018	2017	2016	2015
ROA	0.651	0.531	0.321	0.451	0.458
ROI	0.775	0.736	0.623	0.486	0.361
Sale volume	0.785	0.715	0.354	0.682	0.472
	Percentage Values %				
Market share	33	32	32.6	32.6	36
Customer satisfaction	84.2	66.1	33.1	77.1	50.12
Employee satisfaction	52.3	50.1	40.3	40.1	53.2

Data as presented in Table 4.13 revealed that the highest values for returns on assets (0.651) was recorded on the year 2019 while the lowest value was (0.321) in the year 2017, similarly highest values for returns on investments (0.775) was recorded in the year 2019 while the lowest value was (0.361) in the year 2015. The study also noted that the sales volume grew from 0.472 in the year 2015 up to 0.682 in the year 2016; however, a sharp fall (0.354) was recorded in the year 2017 before pick up in the year 2018 and 2019 as show by values 0.715 and 0.785 respectively.

Further, the study noted that market share had a decline in 2016, constant in 2017 and 2018 and then increased in 2019. Same trend was also observed with customer satisfaction, which grew from 50.12% in the year 2015 up to 84.2% in the year 2019, however the study noted that employee satisfaction reduced from 53.2% in the year 2015 up to 52.3% in the year 2019.

Correlation Analysis

Table 4.4 displays the results of correlation test analysis between the dependent variable (performance of large manufacturing companies) and the independent variables.

Table 4.4: Correlation Table

		Y	X_1
Performance of large	Pearson Correlation	1	.414**
manufacturing firms	Sig. (2-tailed)		0.00
	N	184	184
Product Innovation	Pearson Correlation	.414**	1
	Sig. (2-tailed)	0.00	
	N	184	184

The study found a positive correlation between product innovation strategies (X_1) and performance of large manufacturing companies as shown by correlation factor of 0.414 and this relationship was found to be statistically significant as the significant value was 0.000 which is less than 0.05. These findings concur with the study findings by Maktoba (2015) who contend that Product innovation can generate significant gains in product quality and service levels.

Hypothesis Testing

Product Innovation and Organizational Performance

The focus of test regression one was to determine that product innovation has a significant effect on performance of large manufacturing companies. The hypothesis stated as follows;

> *Ho_1: The strategy of product innovation has no statistical significance on performance of large manufacturing companies.*

Table 4.5 Product Innovation Strategies and Performance of Manufacturing Companies

(a) Model summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.414[a]	.171	.167	.69372

a. Predictors: (constant) Product Innovation Strategies
b. Dependent: Variable: Performance of Large Manufacturing

(b) ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.115	1	18.115	37.642	.000[b]
	Residual	87.588	182	.481		
	Total	105.703	183			

a. Dependent Variable: Performance of large manufacturing

(c) Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	B	Std. Error	Beta		
Constant	3.901	.292		13.361	.000
Product innovation strategies	.824	.134	.414	6.135	.000

b. Dependent: Variable: Performance of Large Manufacturing

The regression equation obtained from this output was:
Performance of large manufacturing = 3.901+ 0.824 Product innovation strategies + error margin.....equation (1)

Test regression results in Table 4.5, shows that adjusted R square value for the regression of Product innovation strategies and performance of large manufacturing is 0.167 which means that Product innovation strategies explains 16.7% of variation in performance of large manufacturing firms. From the ANOVA statistics, the study established the regression model had a significance level of 0.000 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. The calculated value was greater than the critical value (37.642 > 3.89) an indication that, product innovation strategies has a significant impact on performance of large manufacturing. The significance value was less than 0.05 indicating that the model was significant.

Product innovation strategies had a coefficient of 0. 824 and a significant at P value < 0.05, which implies that when product innovation strategies changes by one unit, performance of large manufacturing will change by 0.824 units. The constant term value is 3.901, implying that when product innovation strategies is zero; performance of large manufacturing firms would have a default value of 3.901. Therefore, the null hypothesis one, which stated that strategy of product innovation has no statistical significance on performance of large manufacturing companies, is therefore rejected and the study fails to reject the alternate hypothesis which states that strategy of product innovation has a significant impact on the performance of large manufacturing companies.

DISCUSSIONS

The study found a positive correlation between product innovation strategies and performance of large manufacturing companies as shown by correlation factor of 0.414 and this positive relationship was found to be statistically significant as the significant value was 0.000 which is less than 0.05. These findings concur with the study findings by Maktoba (2015) who contend that product innovation can generate significant gains in product quality and service levels. From the regression analysis, the coefficient for product innovation strategies is 0.824 is significant at P value < 0.000, which implies that when product innovation strategies changes by one unit in the assessment scale, performance of large manufacturing as will also change by 0.824 units.

The study findings revealed that Bamburi Cement Limited develops fresh products that have components which differ totally with the existing ones (M = 4.34 SD=0.47). Further it was established that the organization also increases the quality of manufacturing materials of existing products (M = 4.18 SD=0.96) the Bamburi Cement develops fresh products to enhance the satisfaction of clients (M=4.16 SD=0.77) and that the study also established that the management lowers the cost of manufacturing materials of existing products (M=4.15 SD= 0.67). Results go hand in hand with study conclusion by Tushman and Reilly (2009), new products innovation can help an organization stay ahead of competition as market trends shift. Respondents agreed that organization increases the quality of

manufacturing in the elements of the existing product (M=3.89 SD=0.94). Results go hand in hand with study conclusion by Maktoba (2015) who contend that Product innovation can generate significant gains in product quality and service levels.

CONCLUSIONS

Based on the study findings, this study concludes that there exists a positive relationship between the strategy of product innovation and performance of large manufacturing firms.
In ensuring product innovation, the organization increases the quality of manufacturing in the elements of the existing products and that the firm also develops fresh products that have components which differ totally with the existing ones.

Limitations of the Study

This study was conducted at BCL Corporate Office, Industrial Area and Athi River. The research instrument may give varying data depending on the individuals used against. To overcome this limitation, a pilot study was done to ensure that the questions in the instruments are relevant, clearly understandable and make sense. The respondents approached may be reluctant in giving information fearing that the information sought was used to intimidate them or print a negative image about the BLC. The researcher handled the problem by presenting an introduction letter from the institute and assured them that the information they gave would be treated confidentially and was used purely for academic purposes.

The researcher may also encounter problems in eliciting information from the respondents as the information required was subject to areas of feelings, emotions, attitudes and perceptions, which cannot be accurately quantified and/or verified objectively. The researcher encouraged the respondents to participate without holding back the information they might be having as the research instruments were not bear their names.

RECOMMENDATIONS

Based on the study analysis the study recommends that the manufacturing sector in Kenya should continually embrace product innovation strategy as this strategy provided a framework for creating new products or improving the performance, cost or quality of existing products. Manufacturing companies need to implement policies that encourage a process innovation culture. Companies dedicated to continuous innovation and change need to develop a set of guidelines and processes.

Recommendations for Further Research

This study sought to evaluate the role of product innovation strategies on performance of large manufacturing firms, a case study of Bamburi Cement Limited, Kenya. Other studies may also focus on how dynamic capabilities affect adoption of management innovations in manufacturing sector.

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