

IMPACT OF NEW PRODUCT DEVELOPMENT ON GROWTH OF FOOD PROCESSING FIRMS: CASE STUDY OF KEROCHE BREWERIES, KENYA

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Abstract

New product development is increasingly being considered as one of the fundamental sources of customer satisfaction and competitiveness within the context of strategic management. The general objective of this study is to determine the effect of new product development on growth of a firm in Kenya's processing industry through a case study of Keroche Breweries in Kenya. The research used questionnaires as the main tool for data collection. The main method used is regression and correlation analysis and integration of theories to develop a conceptual model. Findings showed that respondents agreed that product development affect sales in their company. Regression analysis on the effect of new product on growth showed that the mean for the sales volume was 7.33 and a SD of 3.143 while the new product had a mean of 7.67 and SD of 3.676. The correlations between the new products and sales volume was 1.000 and that of new product was 0.577. The model showed that the R and R² values. The R value represents the simple correlation and is 0.577 (the "R" Column), which indicates a high degree of correlation. The R² value (the "R Square" column) indicates how much of the total variation in the dependent variable, New product, can be explained by the independent variable at 33.3%. The study concluded that the management of Keroche Breweries Ltd is therefore advised to continue with product innovations and if possible increase the frequency of the new product launch.

Keywords: *New product development, Invention, Firm growth, Innovation, Food processing firm*

INTRODUCTION

According to Mc Govern 2002, the origin of food processing goes all the way back to ancient Egypt, yet the period of those developments seems to symbolize the history of the culture of mankind. Nowadays, bread, which is characterized by its use of the fermentation action of yeast and which uses wheat flour as its raw material, is baked all over the world. The origins of beer also go back to Babylon and Egypt in the period from 3,000 to 5,000 BC. The foundation of the modern industry was built up with the introduction of machinery and technology of new methods from Germany. Nowadays, the processed foods that are thriving in grocery shops are modern processed foods and traditional foods, but their manufacturing technology, process control and manufacturing and packaging environmental facilities have been advanced and rationalized to an incomparable extent in the last 30 years. As a result, products with high quality and uniformity are now being manufactured. This is based on the advancement of food science, and is, moreover, due to the general introduction of hygienics, applied microbiology, mechanical engineering, chemical engineering, electronic engineering and high-polymer technology.

The success of an organisation lies on the ability to develop new products, innovate and effectively establish the new products development (Bello, Lohtia & Sangtani, 2004). Companies are prospering, growing and sustaining high profitability (Elmquist et al., 2009); due to the application of ideas, concepts and designs to create wealth and refers to new subjects and ideas. It is “the act of introducing something new”. In organizational management, innovation is the creative implementation of new methods to organize or run a company and to create improved results (Ehigie and McAndrew, 2005). Seizing new opportunities as they emerge and increasing both the sales volume and increasing the profit margin, new products enhance creaming off profits before effective competition develops (Ehigie and McAndrew, 2005).

Developing and managing new products is critical for any organisations survival and growth. A venture team is sometimes used to deliberate on the future of any new and existing products. Members of the venture team may consist of product managers and the marketing managers, and members from other functional areas within an organisation who have authority to execute plans. This may entail altering the product mix through such methods as developing new products, developing existing ones, deleting others as well as product modification to desirable characteristics by changing the quality, functional or style modifications.

In most cases the new products are advances on and modifications of existing products. According to Zaltman (1996), the types of new product options vary from major innovations to minor product changes. Major innovations are new products and services for markets as yet undefined. Startup businesses consist of new products and services for a market that is already

served by existing products that meet the same generic needs. New products and services for the currently served market represent attempts to offer existing customers a service not previously available from the company, although it may be available from other companies. Some extensions represent augmentations of the existing product; product improvements represent the most common type of innovation.

Before Keroche's debut, the market had been characterized by a monopoly hence product development and competition was limited. The market that was initially dominated by East Africa Breweries Limited (EABL) catered for middle and upper end of the alcoholic drinks market. As a result, the majority opted for cheap, hazardous local brews like 'Kumi kumi' that has led to lose of lives, blindness, and broken families among other socio-economic effects (KEBS statement, Daily Nation newspaper 9th May 2014). Keroche breweries has since broken the monopoly and delivered alternative affordable and healthy alcoholic drinks to Kenyans especially in the lower end market for example "Viena Ice Ready to drink Vodka" to help reduce alcohol abuse. However, intense rivalry in the alcoholic drinks industry has led to EABL also developing lower end market products like "Keg" probably affecting the gains that were expected by Keroche Breweries. Over the past three years, the company has unveiled a set of high-end brands like Tusker Lite, Pilsner Lite and Snapp in a bid to shield its market share from rivals such as SABMiller, which has re-entered the Kenyan market.

But it now seems to be focused on the low-end market, having launched Balozzi beer in December 2012, a product meant to take on Summit Lager, Keroche's flagship brand. Study by Musia (2013) on the factors influencing competitive advantage by East African breweries Ltd within beer manufacturing sector in Kenya concluded that attained market leadership position through production of quality and superior alcoholic and non-alcoholic products effective distribution and marketing enable the companies to be market leaders influenced achievement of competitive advantage. Gathuiya (2011) carried out a study on achieving sustainable competitive advantage through innovation strategies in commercial Banks. Kibet and Chepkuto (2010) found that creation and sustenance of competitive advantage was achieved through product differentiation in companies and concluded that companies strive to survive and succeed in competition by pursuing strategies that enable them to perform better than their competitors.

From the above studies, none had a focus on new product development in food processing firms. Hence the study investigated the effect of new product development on growth of food processing firms through a case study of Keroche Breweries in Kenya

LITERATURE REVIEW

New Product Development and Innovations

According to Kotler (2004), companies that fail to develop new products are putting themselves at a greater risk. Their existing products are vulnerable to changing customer needs and tastes, new technologies, shortened product life cycle and increased domestic and foreign competition. Kotler (2004) typically listed product development. Idea generation consist of brain storming, reverse brain storming, attribute costing or problem inventory analysis. Screening is the techniques for evaluating new ideas may consist of checklist or open discussion where ideas are either eliminated or considered further. Business analysis is the use of focused groups and concept as to the exact nature of the idea before its prototype is made. This analysis should also provide further evaluation of idea in order to eliminate any of those not considered favorably at this point. At the development stage, prototype development of the idea must be evaluated in terms of production problems, safety requirements, cost, and other modifications before entering any test market.

Reinganum (1983) introduces uncertainty regarding when the incumbent's and challenger's efforts to develop the innovation will succeed, with greater spending expected to speed up the time of successful innovation. Prior to successful innovation, the incumbent enjoys monopoly profits and thus has a greater amount to lose than the challenger from earlier innovation. Consequently, for drastic and near-drastic innovations, the incumbent spends less than the challenger on innovation and therefore is less likely than the challenger to innovate first. Thus, uncertainty in the innovation process can undermine the incentives for industry leaders to maintain their leadership over time.

Organizational innovation is a key competitive weapon in an era of globalization. All firms, large and small, are confronted by twin competitiveness pressures to raise quality and reduce cost. This impulse drives a great deal of innovation practice (Cooke, 2002). Technical and administration are the supporting factors of the firm to achieve competitive advantage by the newness. Particularly in the globalization era, firms should have unique product, process or service to race with competitors. Also encouraged by information technology to reach customers need, seek for new ideas or inspiration to develop firm's commodity. This should guide firms to set their policy for future directions in the business. In addition strategic fit among many activities is fundamental not only to competitive advantage but also to the sustainability of that advantage (Deshpande et al., 1993). Besides how well the activities are accomplished is influenced by how they are organized (Mintzberg, 1979) and the specific behaviors the organization undertakes regarding innovation (Deshpande et al., 1993).

According to Zaltman et al., 1984, firms can grow in one of two ways: namely internal and external growths. In the internal growth, this requires an increase in sales. In order to do this the firm will have to promote existing products and launch new products, this will require an increase in productive capacity. It can finance growth via borrowing, retaining profits (internal funds) or issuing new shares.

In the external growth, mergers and takeovers are ways in which businesses can grow externally and grow by joining together to form one company. Mergers are mutual agreements between the companies involved to join together (Avlonitis et al., 1994,). Most takeovers tend to be hostile, in that the company being taken over does not want to be bought by the larger business. Takeovers do not need to be and are not always hostile, as some in fact can be friendly, in that the company being taken over wants to be taken over and can even ask to be taken over (Avlonitis et al., 1994). Mergers are in different types. A horizontal merger/takeover is one where two businesses in exactly the same line of business or stage of production join/merge with one another A forward vertical merger/takeover is where a business merges with a business at the next stage of the production process, for example a business making furniture may merge with the retail outlet selling the furniture.

A backward vertical merger/takeover is where a business merges with a business at the previous stage of the production process, for example the business making the furniture may merge with the business that supplies the wood and parts for the furniture. A lateral merger/takeover is where a business merges with a business who makes similar goods to it but who are not in competition with each other, for example if a chocolate bar manufacturer merged with a luxury chocolate manufacturer. In joint ventures, businesses join forces with other businesses to share the cost of a project because it is too expensive for one business, share expertise of staff and machinery etc. This is known as a joint venture. The benefits of joint ventures are: businesses have all the advantages of merges but no lose of company identity; each business can specialise in its field of expertise (Han et al., 1998); expensive costs of mergers/takeovers are not incurred; mergers/takeovers can be unfriendly and do not work – staff are concerned about job losses; competition may be reduced due to joint venture.

Larger scale enterprises grow to expand output and achieve a higher level of profit (Hurley and Hult, 1998). The stimulus to achieve year-on-year growth is often provided by the demands and expectations placed on a business by the capital (stock) markets. The stock market valuation of a firm is heavily influenced by expectations of future sales and profit streams so if a company achieves disappointing growth figures, this might be reflected in a fall in a company's market capitalization. Falling share prices increases the risk of a hostile take-over

and also makes it harder and more expensive for a quoted company to raise fresh financial capital by issuing new shares onto the market.

Economies of scale have the effect of increasing the productive capacity of the business and they help to raise profit margins. They also give a business a competitive edge in domestic and international markets. Firms may wish to grow to increase their market dominance thereby giving them increased pricing power in specific markets. Monopolies for example can engage in price discrimination. The expansion of a business might be motivated by a desire to diversify production and sales so that falling sales in one market might be compensated by healthier demand and output in another market. Behavioural theories of the firm predict that the growth of a business is often spurred on by the decisions and strategies of managers employed by a firm whose objectives might be different from those with an equity stake in the business.

Rodgers (1995) insists that organizational innovation is one of the important key success factors of the firms. He proposes that it refers to any idea, practice or object that is perceived to be new by individual or other unit of adoption in the organization. He further clarifies that it involves adoption of new products and/or processes to increase competitiveness, overall performance and new ways of identifying needs of new and existing clients. Innovation, the invention or adoption of something new or different, is conceptually quite close to entrepreneurship (the creation of a new combination of resource).

The capacity to innovate is among the most important components that impact on organizational performance. In addition an innovation can be a new product or service, a new production process, or a new structure or administrative system. Innovation orientation as an organization's openness to new ideas and propensity to change through adopting new technologies, resources, skills, and administrative system. (Hurley and Hult, 1998). Certain types of innovations such as administrative innovations that improve internal operations may have no direct or immediate impact on the market place (Han et al., 1998). Organizations without the capacity to innovate may invest time and resources in studying markets but are unable to translate this knowledge into practice. Innovation is a means for changing an organization, whether as a response to changes that occurs in its internal or external environment or as a preemptive move taken to influence an environment].

Innovativeness dimensions cover several aspects of innovation and affect organizational performance. One of the dimensions is 'innovating leadership', which is a very satisfactory dimension and shows a strong commitment to innovation (Humphreys et al., 2005). It provides strategic advantage since innovation has become a key element in strategic planning at the organization with greater emphasis placed on new technology, products and processes. The development of the process of innovation is viewed as a means of enhancing strategic

advantage. The innovation literature describes this when it distinguishes between 'leader' and 'follower' strategies in marketing, with some firms bearing high risks and costs in the expectation of super profits and others content to entertain less risky and profitable strategies.

METHODOLOGY

In order to explore empirically what the main new product drivers are and what the effect they have on growth of beer manufacturing firms the researcher will use a cross sectional design, and carry out a census on the sample frame. According to (Mugenda and Mugenda, 2003), data collected from a sample can be generalized to a whole population. The target population consisted of 43 managers and supervisors in Keroche breweries. Census method was used to collect data from 43 managers. using questionnaires and document analysis. Document analysis was carried out to establish the sales volume from the year 2002 to 2012. Data was analysed via SPSS V22.0 software package. Data was analysed by use of descriptive and inferential statistics.

ANALYSIS AND FINDINGS

Findings revealed that majority, 34(97.1%) agreed that product development affect sales in their company. Thirteen 13(38.2%) of the respondents indicated that that sales were determined by the number of new products. Majority 22(62.9%) of the respondents indicated that their new products were highly accepted. To establish the effect of new product on growth, linear regression was carried between the percentage market share and sales volume. The following table shows the raw data.

Using the percentage market share and sales volume, the researcher carried out linear regression and the following were the observation. Table below shows the descriptive statistics.

Table 1. Descriptive statistics

	Mean	Std. Deviation	N
Sales volume	7.33	3.143	12
New product	7.67	3.676	12

The descriptive statistics show that the mean for the sales volume was 7.33 and a SD of 3.143 while the new product had a mean of 7.67 and SD of 3.676. Further, correlations were carried out as presented in the table below.

Table 2. Correlations

Correlations		Sales volume	New product
Pearson Correlation	Sales volume	1.000	.577
	New product	.577	1.000
Sig. (1-tailed)	Sales volume	.	.025
	New product	.025	.
N	Sales volume	12	12
	New product	12	12

The correlations between the new products and sales volume it was revealed that the correlations for the sales volume was 1.000 and that of new product was 0.577. The model summary is presented in the following table.

Table 3. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.577 ^a	.333	.266	2.692	.333	4.990	1	10	.050

a. Predictors: (Constant), New product

b. Dependent Variable: Sales volume

The model summary table provides the R and R^2 values. The R value represents the simple correlation and is 0.577 (the "R" Column), which indicates a high degree of correlation. The R^2 value (the "R Square" column) indicates how much of the total variation in the dependent variable, New product, can be explained by the independent variable, New product which in this case can be explained at 33.3%.

Table 4. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.173	1	36.173	4.990	.050 ^b
	Residual	72.493	10	7.249		
	Total	108.667	11			

a. Dependent Variable: Sales volume

b. Predictors: (Constant), New product

This table indicates that the regression model predicts the dependent variable significantly well. Looking at the "Regression" row and then going to the "Sig." column, it can be seen indicates that the statistical significance of the regression model that was run. Here, $r < 0.0005$, which is less than 0.05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable also interpreted as it is a good fit for the data.

The Coefficients table below provides the necessary information to predict sales volume from new products, as well as determine whether new product contributes statistically significantly to the model (by looking at the "Sig." column). Furthermore, we can use the values in the "B" column under the "Unstandardized Coefficients" column, as shown below:

Table 5. Regression Coefficients^a

Model		Unstandardized		Standardized		95.0% Confidence		
		Coefficients		Coefficients		Interval for B		
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	3.552	1.863		1.907	.086	-.599	7.702
	New product	.493	.221	.577	2.234	.050	.001	.985

a. Dependent Variable: Sales volume

The regression equation can be presented as $\text{Sales volume} = 3.552 + 0.493(\text{New product})$.

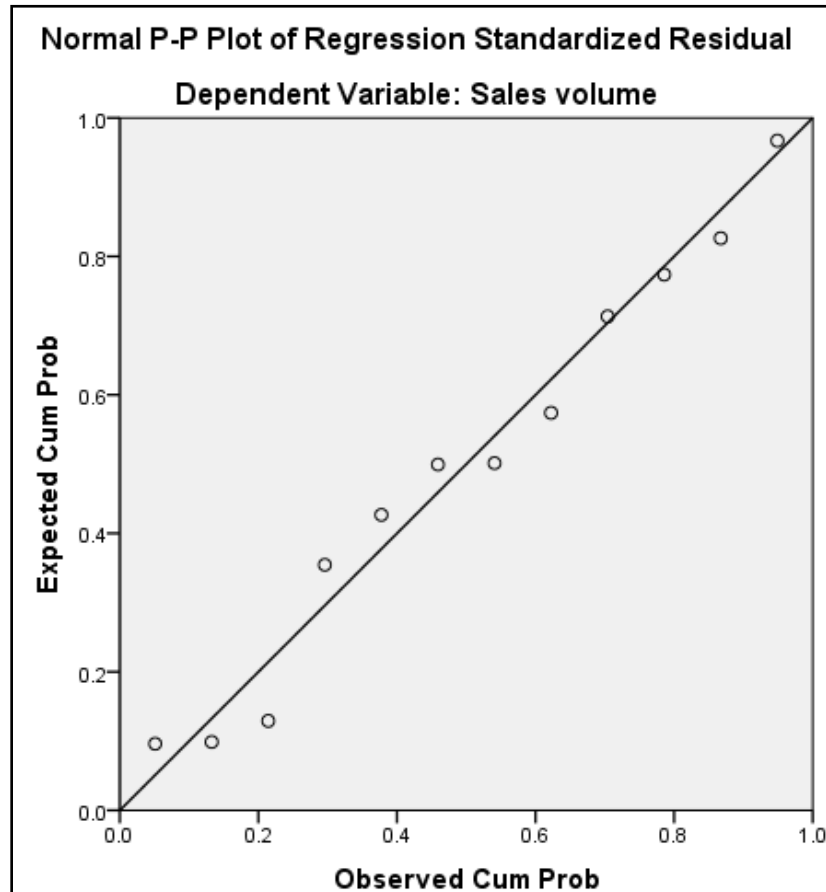
Table 6. Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.04	9.47	7.33	1.813	12
Residual	-3.511	4.955	.000	2.567	12
Std. Predicted Value	-1.813	1.179	.000	1.000	12
Std. Residual	-1.304	1.840	.000	.953	12

a. Dependent Variable: Sales volume

The above table summarises the predicted values and residuals in unstandardised and standardised forms. It is usual practice to consider standardised residuals due to their ease of interpretation. For instance outliers (observations that do not appear to fit the model that well) can be identified as those observations with standardised residual values above 3.3 (or less than -3.3). From the above we can see that we do not appear to have any outliers. The data was presented using the normal PP Plot of regression standardized residual. This is presented in that figures below.

Figure 1. Normal P-P Plot



The above plot is a check on normality; the plotted points should follow the straight line. Serious departures would suggest that normality assumption is not met. Here is no major cause for concern. The study concluded that new product development influenced the growth of Keroche Breweries Limited. The sales were determined by the number of new products to a very great extent. New products were highly accepted and the level of acceptance of new products developed by the company was high and that new product development strategy influenced market position of Keroche Breweries Limited. The study recommended that the organisations should put research and development a part of their business and encourage product innovation for growth.

CONCLUSIONS AND RECOMMENDATIONS

The study concluded that new product development had an influence on growth of a firm in Kenya's processing industry through a case study of Keroche Breweries in Kenya. New products developed by the company was high which influenced market position of Keroche Breweries Limited. The study recommended that the company should come up with new

products within a given duration time as this would increase the growth of the company. The research also recommended that the government should create a conducive business environment so that food processing industries are able to come up with new products. It was also recommended that the government should improve policies that affect product innovations as this would make companies bring up more innovations.

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