Assessing the Influence of Product Quality on Product Turnover of Selected Manufacturing Firms

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Abstract
This study examined the relationship between product quality and product turnover of selected manufacturing firms. In this cross-sectional, the data generated from 92 respondents firms was analysed using mean scores, standard deviation and hypotheses tested using t-statistics. The results showed that there is a strong positive significant relationship between dimensions of product quality (product performance, product conformance, product serviceability, product aesthetics, and product perceived quality) and product turnover. The study also found that improvement in the quality of products leads to high product turnover. Therefore firms should first define and determine the objectives of customer needs and ensure that those needs are communicated at levels. That effective quality control process should be put in place in order to minimize product return rate. More so, product quality is a determinant of repurchase intentions in most consumers, therefore manufacturing firms seeking to increase their product turnover have to give considerable attention to quality.
Keywords: product quality, product turnover, product performance, product conformance.

Introduction

Quality has been typically regarded as a strategic component of competitive advantage, and thus improving product quality is a major concern for manufacturing firms especially in an emerging economy as in Nigeria. In response to the pressure of globalization, increasing competitive markets, and turbulent market dynamics manufacturing firms are seeking ways to add value to their product and improve the turnover rate of their products.

Product turnover is a term that describes the frequency of selling inventory that is on hand, measuring sales and shows whether inventory is moving out or sitting unsold (Devra, 2015). Product turnover expresses the speed at which manufacturing firms sell its product or how much turnover the average inventory generates in one year. Also, the product turnover indicates how many times during a year manufacturing firms are able to sell the quantity of products that matches its average inventory (Marijan, Ivan and Maja, 2013).

Managers of manufacturing firms are responsible for the investment in inventories and for the success of inventory management. Levy, (2009) posited that increased inventory turnover can increase sales volume, improve salesperson morale and reduce the risk of goods obsolescence. Higher frequency in product turnover is particularly important because, unsold inventory becomes stale, obsolete, and wasted products represent a complete loss.

Given the Nigerian experience, the volume of counterfeit and sub-standard products in the domestic market affect sales volume of manufacturing firms that produces quality products as verified by Standard Organization of Nigeria that regulates product quality. Opoko, Ezema and Ediae (2014) stated that it is unfortunate to report that in Nigeria, for every fast selling product, counterfeiters would produce something similar without regards to specifications. Also, Olaleke, (2010) observed that there is virtually no product that is not either faked or sub-standard when compared with the original from pharmaceutical to textile, beverage, ceramics, electrical and electronics. This becomes worrisome, as it is likely to affect sales volume and subsequently product turnover of manufacturing firms, and their ability to attain economies of scale. Given these apparent manifestations, this study assessed the influence of product quality on product turnover of manufacturing firms.

Literature

A firm that is market oriented should identify consumers' dissatisfaction with the level of product quality as a departing point in producing and delivering unique products that affords sustainable competitive advantage (Hajjat and Hajjat, 2014; Neil, 2011). Earlier, Ozaki (2003) identified a three-fold meaning of product quality management in manufacturing to include, getting the job done on time, ensuring that the basic characteristics of the final product fall within the required specifications and getting the job done within budget.

Again, firms with high product quality attract higher customer satisfaction, greater market share and productivity (Akinola, Akinradewo, and Olatunji, 2012). Also, Yusuf and Aspinwall (2000) posited that, the implementation of quality management initiative has proven that customer-focused approach in operations will increase process efficiency and greater customer satisfaction. It is appropriate that implementation framework be developed before actual implementation to ensure a successful adoption of quality management initiative in any organization. Ignatio, Lovemore and Chancellor, (2013) posited that the survival of manufacturing firms in an

increasingly competitive environment depends on its ability to produce high quality products at the lowest possible cost and in timely manner with the shortest possible lead time.

Manufacturing firms that offers consumers multiple options, finds it difficult to achieve a healthy product turnover rate because of the need to carry so much inventory (Fox, Montgomery and Lodish, 2004). The success of firms that offers a wide range of product inventory depend on having certain products that turns over quickly and pay for the cost of inventory in other product brands that are slower-moving. Also, product seasonality, obsolescence and high carrying costs are challenges that can affect the product turnover of manufacturing firms (Rachel, Andy and Edwin, 2008).

Again, Julian and Syed (2014) posited that, better quality would lead to the retention of existing customers and in attracting new customers, which in-turn would increase market. Furthermore, Gunasekaran, (1999) pointed out that firms are pursuing quality management implementation in order to deliver high-quality products to achieve their business objectives. Again, the primary reason fuelling the drive for quality is that consumers are increasingly demanding better quality with lower prices.

Garvin (2007) proposed that organisations could compete on a number of product quality dimensions as performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. Again, Fandos and Flavian, (2006) observed that manufacturing firms are interested in product quality due to its potential to expand market share, lower costs of production/operations, improve productivity and ultimately increase profits. Also, pursuing a quality niche can lead to a better product turnover, especially if the dimension singled out is one that other firms have not targeted.

Tsiaotso, (2005) stated that not all dimensions of quality has relationship with product turnover, while other scholars (Madu, Kuei, and Lin 1995; Llusar, Zornoza, and Tena, 2001) found an indirect influence between product quality and turnover through the mediating variable of customer satisfaction. However, it was discovered that product quality on turnover for some products have dual effect, either direct or indirect effects this is due to the fact that the assessment of product's quality does not necessarily require past experience with the product, (Tsiaotso, 2005). Hence we hypothesise that there is no significant relationship between product quality and product turnover of manufacturing in Nigeria.

Methodology

The type of investigation used was a correlation study, which involves examining the relationship between product quality and the rate of product turnover. Ninety two (92) copies of questionnaire were administered to manufacturing firms adopting the survey research design.

Data Analysis
Effects of Product Quality on Product Turnover

Table 1: Summary of regression analysis result showing the effects of product quality on product turnover

Variables	Coef.	t-cal	sig. t	t-tab (0.05, 90)	r	r^2	F-cal	F-tab (0.05,1, 91)	p-value
Constant	2.417	3.504	0.001	1.96	0.94	0.88	670.41	3.94	0.000
PQ	.323	25.892	0.000						

Dependent Variable; Product Turnover

Source: Field survey, 2018.

Table 1 showed that the coefficient of correlation is 0.94. This indicates a very strong positive relationship between product quality and product turnover. The F-cal = 680.414 > F-tab $_{(0.05, 1, 91)}$ = 3.94; t-cal = 25.892 > t-tab $_{(0.05, 90)}$ = 1.96 had a corresponding significant p-value of 0.000; showed that product quality has a strong significant influence on the outcome of product turnover. Further analysis of identifying the cumulative effect of dimensions of product quality (performance, product conformance, product serviceability, products aesthetic and product perceived quality) on product turnover is shown in Table 2.

Table 2: Summary of effect of product performance, product conformance, product serviceability, products aesthetic and product perceived quality on product turnover

Variables	Coef.	t-cal	sig. t	t-tab (0.05, 89)	R	R^2	F-cal	F-tab (0.05,5, 91)	p-value
Constant	1.308	2.447	.016	1.96	0.991	0.982	919.992	2.31	0.000
PP	0.098	2.409	.163						
PC	.277	2.001	.049						
PS	.427	5.911	.000						
PA	1.054	10.021	.000						
PPQ	.303	2.889	.000						

Dependent Variable; Product Turnover

Source: Field survey, 2018.

The result in Table 2 showed that the multiple correlation coefficient is 0.991. It indicates that a very strong significant relationship exist between the dimensions of product quality and product turnover. The coefficient of determination (R^2) = 0.982. It implies that 98.2% variation in product turnover is explained by variations in product performance, product conformance, product serviceability, product aesthetic and product perceived quality. The F-calculated of 919.992 had a corresponding significant f-value of 0.000; the researcher therefore concludes that the model is useful. Conventionally F-Cal = 919.992 > F-tab $_{(0.05, 5, 91)}$ = 2.31 hence the decision above is upheld. Comparatively each of the dimensions of product quality has a significant effect on product turnover; and in a pool bears more influence on product turnover, than what each isolated aspect of product quality

Discussion

Product performance refers to operating characteristics of a product as an aspect of product quality which combines both product and user evaluations in the inert characteristics of the product. However, quality product acceptance differences are perceived as quality differences depending on individual preferences of consumers. Consumers have a wide range of interests and needs, each likely to equate quality with high performance in his or her area of interest (Hajjat, and Hajjat, 2014).

The analysis in Table 2 showed that product performance has a t-cal value of 2.409 > t-tab 1.96, which indicate a positive and significant relationship between product performance and product turnover. This finding supports the view that consumers tend to attribute particular preference to particular product classes by learning the differences between the performances of those products. More so, the performance of products can play roles in customers' response and purchasing behaviour.

Rundh (2005) noted that, quality attracts consumers' attention to a particular product, and influences consumers' perceptions of such product. Again, it serves as differentiation, that is, it helps consumers to choose from wide range of similar products and stimulates their buying behaviour (Wells, Farley and Armstrong, 2007). As indicated in Table 2, product conformance revealed a t-cal 2.001 > t-tab 1.96 signifying that product conformance has effect on product turnover. Justifying this, Garvin, (2007) pointed out that product that conforms to design specifications is primarily process oriented, in that it reflects how well the product and its individual components meet the established standards in satisfying the customers.

Also, another dimension of product quality is serviceability as most consumers use this as a criterion for product selection (Hajjat, and Hajjat, 2014). Customers are concerned not only about a product breaking down, but also the elapsed time before service is restored and the timeliness with which service appointments are kept (Drozdenko and Jensen, 2005).

Again, the analysis in Table 2 showed t-cal 5.911 > t-tab 1.96, which confirm that also serviceability of a product affect product turnover justifying the view of Stevenson (2012) that dimensions of serviceability such as service warranty, length of time customers wait for service appointment, schedule of preventive maintenance, information regarding repairs, all influence the rate of purchase which ultimately affect the product turnover.

Consumers can value the look' of a product purely for its own sake, as looking at something beautiful is rewarding in itself. When product alternatives are similar in functioning and price, consumers will prefer the one that appeals the most to them aesthetically. The analysis in Table 2 showed a t-cal of 10.021 > t-tab 1.96, hence product appearance (aesthetics) can provide value in itself as many customers like to buy a product that looks aesthetically pleasing. As product aesthetics influences consumers, evaluation is often complex for manufacturers to understand what consumers really want and produce quality products that are appealing in appearance.

Another dimension of product quality assessment is perceived quality. The perception of quality can be as subjective as assessments of aesthetics, because consumers do not always possess complete information about a product's attributes as they frequently rely on indirect measures when comparing brands. In these circumstances, products will be evaluated less on their objective characteristics than on their images or brand name. Both reputation and the historical strength of a product are important in explaining the ranking of a product based on its perceived quality. A customer's perception of value towards the product is shaped by the product perceived quality. Again, the analysis in Table 2 showed t-cal of 2.889 > t-tab 1.96 indicating that perceived quality affect product turnover. Customers assume that higher prices imply higher quality, but this is not always the case when other factors such as brand name, product image, product features and country of origin influence consumer perception. Thus, if customers perceive a product to be of good quality their buying behaviour results in higher turnover.

Conclusion

Achieving high product turnover requires that Production managers have access to marketing information on quality specifications in producing quality products that will invoke re-purchase behaviour in consumers to increase the product turnover of the organization. Products that conform to specific design to suite consumers'

expectations are likely to steal their heart and in turn increase patronage which results in high product turnover. More so, poor quality products have negative consequences on product turnover, in the sense that it repels consumers from re-purchasing the product. Since low quality product does not provide the required utility for the consumers improvement in product conformance will bring about an increase in product turnover. Also, effective product serviceability and user friendly products will likely result in high turnover rate of manufacturing firms. Thus, manufacturing firms should have effective customer care unit that provides pre- and post- purchase services.

Again, products with bright colours are valued aesthetically more with higher perceived value inducing consumers buying the product leading to high turnover rate.

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