Influence of Perceived Product Quality on Consumer Satisfaction amongst Dairy Milk Processors in Kenya

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ARTICLE INFO

Article History
Submitted  20 Aug 2018
Accepted  04 Mar 2019
Available online  13 Mar 2019

JEL Classification
M31

Keywords
Perceived Product Quality
Consumer Satisfaction
Dairy Milk Processors
Packaging and Repeat Purchase

ABSTRACT

The milk processing industry is facing a very competitive business environment brought about by new entrants and cheaper technology. In Kenya, low investments in quality by dairy milk processors has dampened firms’ competitiveness. The purpose of this study was to determine the influence of perceived product quality on consumer satisfaction amongst dairy milk processors in Kenya. The study was guided by cross-sectional research design. The study population comprised of consumers who purchase dairy milk from major supermarket chains in Kenya. Primary data was collected from 384 respondents using a semi-structured questionnaire which was self-administered. Descriptive statistics and regression analysis were used to analyse data with the help of SPSS version 21. Descriptive analysis showed that the consumer perception of quality of milk was high. Regression analysis showed that perceived product quality was statistically significant at 5% explaining 6.1% of changes in consumer satisfaction. The study concluded that, perceived product quality is a key ingredient for consumer satisfaction and dairy milk processors need to invest heavily in that area for them to be competitive. The study recommends that, dairy milk processors in Kenya must strive to customize their dairy milk products by empowering consumers to give input to products quality, design and seek their views on the most preferred service parameters that will their satisfaction.

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1. Introduction

Customers perceive high quality products as having a direct positive relationship from non-monetary sacrifice value by a good store image (product, promotion), high intensive distribution (place), and high advertising spending (promotion) (Yoo, Donthu & Lee, 2000). Zeithaml, (2006) indicated that businessmen recognise that to retain consumers, they have to avail high quality services. High quality products also support market growth. Priluck and Lala (2009) posit that complaints are a valuable source of important market intelligence. According to the authors, companies should use customer complaints to amend where necessary thereby improving the service or product (Mccollough, Berry, & Yadav, 2000). Moon, Chadee and Tikoo (2008) add that in addition, to high product quality, product availability is an important aspect in enhancing sales performance. According to the authors, unavailability of the service or product means that it cannot be sold hence it cannot satisfy any consumer.

The dairy milk processors products are experiencing a highly competitive business environment that is forcing them to review and improve loyalty opportunities and strategies (Davis, Dong, Blayney & Owens, 2010). Thus keeping steadfast clients speaks to a procedure for accomplishing particular and maintainable competitive advantage (Roberts, 2003). However, there is no consensus on the determinants of customer satisfaction. As the competitive environment turns out to be more unique, the most critical issue the dealers confront is never again to main high product quality in order keep faithful buyers who will contribute long haul benefits to associations (Tseng & Seidman, 2007).

Globally, the milk industry makes a critical commitment to the economy. Milk industry items utilization is normal all through the world. However, the elements that influence milk generation have a tendency to vary from nation to nation (Nyariki & Thirtle, 2000). Dairy milk processors have been a source of employment to many people globally. In Ethiopia the 24 processing units have created employment opportunities in rural areas, with each unit employing up to four permanent workers (Redda, 2001). In Denmark, Arla foods is a dairy company and a cooperative owned by over 7000 Danish and Swedish dairy farmers. Arla’s core markets are in Sweden, Denmark, Finland, United Kingdom (UK), Germany and Netherlands. The company has made a lot of investment in ensuring quality in their products by training employees on how to handle critical incidents on dairy, hygiene and food safety as well as packaging their products well for safe delivery to the customers (Martins, 2010). In New Zealand, Fonterra Cooperative Group takes milk from its approximately 13,000 farmers, representing 96% of raw milk produced, and delivering almost all of it to consumers in export
markets worldwide (Fonterra, 2011). The company is in control of activities that range from producing milk products, to distributing end products in retail markets (Graham, 2014). A study in United States of America (USA) by Wolfe and Shepherd (2006) and Wolfe and Best (2005) indicated that, a critical number of respondents are occupied with acquiring privately delivered milk items, with some additionally demonstrating that they would pay more for those items. Germany has a great deal of milk processors that are moderately expansive. In 2009 Nordmilch Konzern was the greatest one preparing 4.1 million tons (Hemme, 2014). The ten greatest processors represent 58 for every penny of the aggregate milk conveyed in Germany.

In Kenya, the dairy industry contributes 14% to the gross domestic product in agricultural sector and about 4% to the overall Kenya gross domestic product (GDP). The dairy industry is a huge source of livelihood for more than 1,000,000 people in the sub-sector (Mutura, Mwangi, Nyairo & Wambugu, 2016). An estimated 80% of the 5 billion litters of milk produced annually is supplied by small holder dairy farmers while 20% of the remaining amount of 1 billion is supplied by large scale dairy farmers (Odero, 2017). Within this amorphous group of small holders dairy farmers an increasing number is commercializing fast and practicing dairy farming as their core business (Odero, 2017). The Kenya Dairy Board (2014) reports that almost every Kenyan consumes some milk on a daily basis making the dairy industry an important aspect of nutrition and food security, with an average consumption of 115 litres annually. The largest share of food expenditure in a Kenyan household budget is made up of dairy industry products (Njagi, 2013). Baiya and Kithinji (2010) indicate that due to its importance, the dairy industry has been recognized in vision 2030 as a source of Kenya’s growth and development (Baiya & Kithinji, 2010).

The dairy processing industry in Kenya is made up of a few big dairy processors. However, there exists a huge number of smaller and medium operators. The formally licensed dairy processors in Kenya are 40 dairies that actively produce and avail products through normal retail channels (KDB, 2014). In Kenya there are 4 big dairy processing firms producing above 100,000 litres per day. These firms include Brookside, New KCC, Sameer Agriculture and Livestock and Githunguri dairy Cooperative Society. There are also medium sized milk processing dairies which produce less than 100,000 litres per day. These include Kinangop Dairy, Meru Dairy Cooperative Society and Kabianga dairy (KDB, 2014).In Kenya, for dairy processing firms to remain competitive locally and globally they must create value by having high quality products and variety, perceived value and satisfied consumers in order to create a sustainable loyal consumer base (Karanja, 2007).
Statement of the Problem

Lack of product diversification and capacity for value addition by Kenya dairy processors has led to most of the milk produced by dairy farmers in Kenya to be consumed raw (Kariuki, 2016). In the present aggressive retail environment and as product quality is enhanced, the client’s desire and parallel interest on benefit level is expanded every now and then (Ghosh, Tripathi & Kumar, 2010). Poor service quality by milk processors has dampened firms’ competitiveness leading to loss of milk market (Graham, 2014). Superville & Gupta, (2001) posits that, for firms to be successful they must be willing to improve quality of products in accordance to consumers demand. Poor quality products by milk processors in Kenya has led to a dissatisfied consumer and the end results are low or no profits, mergers and loss of jobs due to closure of milk processing firms (Olorunniwa, Hsu & Udu, 2006). Several local scholars who have highlight issues in the dairy milk industry in Kenya include: Mwendwa (2008), Tuei (2010), Njarui, Gatheru, Wambua, Ngulu, Mwangi and Keya (2012) and Kiplangat (2015). These scholars concentrated on primary and secondary milk production stages. Data on product availability or perceived product quality is however lacking.

Purpose of the Study

To determine the influence of perceived product quality on consumer satisfaction amongst dairy milk processors in Kenya.

Hypothesis

H₀¹- Perceived product quality has no significant influence on consumer satisfaction of dairy milk processors in Kenya

2. Literature Review

Theoretical Review

The Theory of Reasoned Action (TRA) assumes that conduct aim is a vital factor in deciding behaviour (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 2005). The TRA proposes that there are two reasonably autonomous determinants of social goal. The primary determinant is mentality toward the conduct, which alludes to whether an individual has a positive or horrible assessment of the conduct (Ajzen, 2005; Fishbein & Ajzen, 2005). This means the consumer of dairy processed milk will either have a positive or negative perception towards buying the product. The second determinant is abstract standard, which alludes to the apparent social strain to perform or not to play out a conduct (Ajzen, 1991; Fishbein & Ajzen, 2005). The
consumer of dairy processed milk can be influenced in the buying behavior by the people for whom they buy the milk i.e. the product they buy may be dictated by family members. Theory of Reasoned Action holds that, whether or not an individual performs a certain behavior can be predicted by his/her behavioural intention.

The TRA, which comprises of just two parts is frequently condemned in light of the fact that it accept that every single human conduct to be volitional and reasonable (Chang, 2008). In any case, not all practices are full volitional or completely controlled by the individual (Ajzen, 2005). For example, when an individual buys another milk brand, various components may avert him/her from settling on a reasonable choice. An individual may like the new milk product, yet he/she may buy another milk item in light of another family member can't help contradicting his/her decision. For this situation, an individual may change his/her proposed buying conduct because of variables outside his/her control.

**Empirical Review**

In the event that an item satisfies the clients' desires, the client will be satisfied and consider that the item is of adequate or even high caliber. Cronin (2000) proposed that apparent item quality is a precursor that positively affects apparent esteem though (Souter & Sweeney, 2001) have battled that quality is a sub-part of generally speaking worth. The formation of client value has turned into a key basic in building and managing an upper hand (Wang, 2004). It has been built up that sales performance and profitability are emphatically connected to the value that is made for clients. It has been expressed that, the idea of perceived value has turned out to be a standout amongst the most abused and abused ideas in the sociologies when all is said in done and in the administration writing specifically. This view sets perceived value as an all-around dimensional develop that can be estimated just by requesting that respondents rate the esteem that they got in making their buys (Khalifa, 2004). Nonetheless, Souter and Sweeney (2001) have recommended that this conceptualization of 'significant worth' (as basically an exchange off among advantage and forfeit) speaks to a limited way to deal with the idea. Researchers like Campbell and Frei, (2010); Clark, (1996); Terpstra and Verbeeten, (2014), have contended that perceived value is a multidimensional build in which an assortment of thoughts, (for example, saw value, quality, advantages, and forfeit) are altogether inserted. Low quality makes customers disdain the item. High item quality is indivisible from benefits related with item costs that don't limit item wellbeing credits to buyer fulfillment related with item security (Golder, 2012). Zamazalova (2008) mentions product quality as the key factor that affect consumer satisfaction and which can be used to measure consumer satisfaction. Cooil (2007)
indicates that, the relationship of product quality and customer satisfaction over a long term results to positive profitability to a company.

**Conceptual Framework**

Figure 1 shows the conceptual framework for the study.

![Conceptual Framework Diagram]

Mathematical Equation: \( Y = C + BX \)

Where \( Y \) = Customer satisfaction

\( C \) = Constant

\( B \) = Beta Coefficient

\( X \) = Perceived Product Quality

**3. Methodology**

The study adopted a pragmatic research philosophy. A combination of positivism and interpretivism should be combined to address a social real life issues (Creswell & Plano, 2011). Cengiz (2010) used pragmatism philosophy in his study on measuring customer satisfaction; must or not. Cruz (2015) also used pragmatism philosophy in his study of relationship between product quality and customer satisfaction. This study was guided by cross-sectional research design. This study used mixed method approach which combined elements of qualitative and quantitative research approaches. The study population comprised of consumers who purchase dairy milk from 15 major supermarket chains in Nairobi, Nakuru, Eldoret and Mombasa. The study collected data from fifteen (15) major supermarkets in Nairobi, Nakuru, Eldoret and Mombasa. A sample of 384 respondents was calculated using Cochran (1977) formula. The
respondents were drawn from consumers who buy processed dairy milk from major supermarkets in Nairobi, Nakuru, Eldoret and Mombasa and were selected using simple random sampling. Simple random sampling was used because each population element had a known and equal chance of selection.

This study adopted a self-administered method in distributing the questionnaires. A pilot study was carried out by pre-testing the questionnaire of a selected sample which was similar to the actual sample to be used in the study. The procedure that was used to pre-test the questionnaire was identical to that which was used during the actual data collection to allow meaningful observation. Cronbach’s alpha coefficient was used in measuring internal consistency of the questionnaire. For pilot testing, data from 30 respondents was collected, representing 10% of the population in the study. Cronbach’s Alpha statistic ranged from 0.8 to 0.9, indicating high reliability of data. Mertens (2010) avers that the closer the coefficient is to 1.0, the more reliable the measurements. This study used convergent validity and discriminate validity. In this study multiple outliers were tested using mahalanobis D- square. Cases with high D- square values were considered to be outliers. Data analysis was carried out using the Statistical Package Software for Social Sciences (SPSS) Version 21.

4. Results

A total of 370 out of the 384 questionnaires were filled and returned. All the questionnaires were correctly filled and were considered adequate for data analysis. This constituted a 96.4% questionnaire return rate, which is considered very good by Saunders, Lewis, and Thornhill (2009) and ‘a very high response rate’ by Bryman and Bell (2011).

Diagnostic Tests

T-test was used to test the hypothesis. Diagnostic tests for outliers, normality, linearity, multicollinearity and homoscedasticity were also conducted. Testing for outliers was conducted using Mahalanobis distance. The findings showed that, there was no problem of outliers as both perceived product quality (p=0.014) and consumer satisfaction (p=0.017) had p values above 0.001. Perceived Product Quality had a skewness of 0.514 while consumer satisfaction had a skewness of 0.831 indicating normal distribution as the values lie between -3 and +3 as recommended by West, Finch and Curran (1995). Linear association test showed that, there was linearity in the variables as the perceived product quality (p=0.019) had p-values less than the critical value of 0.05 as recommended by Bai and Perron (1998). In testing for multicollinearity, Perceived Product Quality (VIF= 1.327) and Consumer satisfaction
Multicollinearity posing problems in data analysis was not there (O’Brien (2007) explains that a variable whose VIF values is greater than 10 may merit further investigation. Levene’s statistic yielded a p value of 0.057 thereby satisfying the assumption of homoscedasticity as it was greater than the critical value (0.05) as recommended by Bryman (2012).

**Perceived Product Quality**

To assess the perceived product quality of process milk, respondents were asked questions regarding packaging, appearance, expectations and nutritional value. The findings would enable examination of the extent to which perceived product quality influences consumer satisfaction in dairy milk processors in Kenya. The findings are presented in Figure 2. Majority (M=1.34) of respondents in the study indicated that they were able to identify the milk brands they bought by using package and brand colour. Majority (M=1.87) indicated that they were satisfied with the package size of the milk product which they purchased. Majority (M=1.9) respondents indicated that the quality of the milk product they purchased met their expectations. Similarly, majority (M=1.8) respondents trusted the nutritional value of the milk product that they purchased. The total mean of 9.01 and the average mean of 1.8 indicate a high agreement among respondents and convergence of views on perceived product quality. These results therefore show that, the consumer perception of quality of milk was high.

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**Figure 1**

Descriptive Analysis of Perceived Product Quality
Consumer Satisfaction

To assess consumer satisfaction, the respondents in the study were asked about their satisfaction with quality, availability, services, complaints handling, availability, services and whether they spread word of mouth about their preferred brand. The findings are shown in Figure 3. Majority (M=1.46) indicated that they were satisfied with their preferred milk processors products. Majority (M=1.42) of respondents indicated that they were satisfied with the quality of their preferred milk products. Similarly, majority (M=2.06) indicated that they spread a positive word of mouth about preferred milk processors products. Majority (M=1.28) of the respondents agreed that they trusted that, their preferred milk product was always available in the supermarket shelves. Majority (M=1.73) of respondents also indicated that their preferred milk processors products are always available to their expectations as a consumer. Majority (M=1.66) of the respondents indicated that they were satisfied with the supermarket’s services. Majority (M=1.6) of the respondents agreed that they believed the supermarket offered high quality services to their satisfaction. A moderate number (M=3.1) of the respondents agreed that they trusted that the supermarket handles complaints effectively.

![Figure 2](image-url)

Descriptive Analysis of Consumer satisfaction
Relationship Between Perceived Product Quality and Consumer Satisfaction

To achieve the purpose of the study, which is; “To assess the influence of perceived product quality on consumer satisfaction amongst dairy milk processors in Kenya” the null hypothesis H01 (Perceived product quality has no significant influence on consumer satisfaction of dairy milk processors in Kenya) was tested using t- statistics. From Table 1 perceived product quality was statistically significant at 5%. This shows that perceived product quality has an overall effect on consumer satisfaction. The coefficient of perceived product quality was 0.656 which means a unit change in perceived product quality leads to a 0.656 increase in the level of consumer satisfaction. Perceived product quality has an overall effect on consumer satisfaction.

Perceived product quality (p=0.00) was significant. This means that there was a significant relationship between perceived product quality and consumer satisfaction. Therefore, the null hypothesis H01 is rejected; the alternative hypothesis H1 stands that perceived product quality influences consumer satisfaction of dairy milk processors in Kenya. The R² was 6.1% which means perceived product quality explained 6.1% of changes in consumer satisfaction. The model was correctly specified given that the F statistic was significant at 1% (p< 0.01). The equation for perceived product quality and customer satisfaction is as follows;

Equation 1: Effect of Perceived Product Quality on Customer Satisfaction

\[ Y = 3.910 + 0.656PPQ \]

Where \( Y \) = consumer satisfaction, PPQ is perceived product quality

Table 1

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>3.910</td>
<td>0.404</td>
<td>9.685</td>
<td>0.00</td>
</tr>
<tr>
<td>1Computed scores of perceived product quality</td>
<td>0.656</td>
<td>0.134</td>
<td>0.247</td>
<td>4.889</td>
</tr>
</tbody>
</table>

R = 0.247, R² =0.061, Adjusted R² = 0.058, F = 23.902, P= 0.00, Std. Error = 1.038
5. Discussion

The study results showed that, there was a significant and a positive relationship between perceived product quality and consumer satisfaction of dairy milk products. The respondents were able to identify the milk brands they bought from supermarkets. This means that, dairy processing firms had built brand loyalty by having a combination of brand symbols, signs, and designs that enabled consumers to identify the dairy milk brands and differentiate them from those of competitors. The study also found that respondents were satisfied with the milk products packages, appearance and that they met their expectations. This implies that, the dairy milk processors had positioned their milk brands in the market such that, consumers had established positive brand associations. The consumers had cognitively built brand related thoughts, feelings, perception, attitudes and experiences linked to the brand image. Respondents indicated that, they were satisfied with the nutritional value of the dairy milk products. This means dairy milk processors had perfected the art of using the positive quality attribute of milk products to outdo their competitors and also realize their corporate image. This is in line with their brand promise of what their milk products should be like and how they have improved the health of their customers.

The study also found out that, perceived product quality had a statistically significant effect on satisfaction level. Dairy milk processors viewed perceived product quality is an important driver of consumer satisfaction. Descriptive analysis carried out in the study showed that, consumer's judgment about a milk product's overall excellence was high and this enhanced their satisfaction. This indicates that, dairy milk processors had succeeded in positioning and differentiating their products using quality approach in the market. This has led to growth of the dairy milk industry, improved business for the dairy milk processors and dairy milk processors have invested heavily in product innovation through value addition. As a measure of continuous improvement, dairy milk processors in Kenya have invested in capacity building for the dairy farmers so that they can supply quality milk. The dairy milk processing firms have also improved their payments to dairy farmers and this has stimulated socio-economic growth to the rural community and the nation as a whole which is in line with one of the governments’ big four agendas of reducing poverty through manufacturing.
6. Conclusion

Product quality is important for any processing firm as a way to be innovative, competitive and a darling to customers. Dairy milk processors are developing of dairy milk products with customers in mind. Enticing the customer through product quality is more important than the bottom line. Product innovation brings about continuous improvement of both product and service and this contributes to product differentiation. Dairy milk consumers would like to be associated with dairy milk processors who have invested heavily in customer satisfaction. However, processing firms must always know that there is competition from new entrants from foreign markets and also needs of consumers keep changing as a result of consumer preferences, technology change, changing lifestyles and exposure to product choices. Therefore, product quality is a core growth ingredient for any dairy milk processing firm in Kenya.

7. Recommendations

The study recommends that, dairy milk processors in Kenya must strive to customize their dairy milk products by empowering consumers, their employees, dairy farmers and suppliers through capacity building and technological innovation. This would be a boost to Kenya’s vision 2030 especially in food security, manufacturing capacity and increase in the country’s nutritional value.

References


