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IMPACT OF PRODUCT QUALITY ON CONSUMER PROTECTION OF SELECTED SMES IN MUBI, ADAMAWA STATE, NIGERIA

ABSTRACT

Implementation of service quality by a service company is to provide the best service quality for the customer with the goal of creating customer satisfaction. However, there are often differences between customer expectations and customer perceptions of the quality provided by the company. The main objective is to examine the impact of product quality control on customer protection in rice milling firms in Mubi metropolis, Adamawa State. The study is a survey research design in form of causal research design in which data was collected through questionnaire administered to 93 respondents. Data collected was subjected to percentage analysis and hypotheses were tested using regression analysis at 0.05 level of significance. The findings revealed that the coefficients of the impact of product features on customers satisfaction is statistically significant ($\beta = 0.836$, $t = 15.887$, $p < 0.05$). Moreover, coefficients of the impact of product reliability on customer satisfaction is significant value ($\beta = 0.955$, $t = 44.219$, $p < 0.05$). In addition, coefficients of the impact of product conformance on customer satisfaction is positively significant ($\beta = 0.922$, $t = 43.176$, $p < 0.05$). This means that there is significant and positive relationship between product quality control and customer satisfaction in selected Rice milling firms. The study, recommends that the management of the selected Rice Milling firms should ensure that they adhere strictly good product features by monitoring all the phase of production and to provide all the necessary tools that are required to carryout effective and successful production with observation of all necessary features needed.

Keywords: Consumer, product, protection, quality and satisfaction.

INTRODUCTION

The need for consumer protection through NAFDAC and SON and other regulatory agencies become very important. These agencies help in protecting consumers through their activities of detecting and preventing them from circulating such harmful product that are of in health to Nigerian populace. Therefore, consumer perfection is indispensable for the betterment and well-being of the consumers without which the consumers become victims of money mongers who are out to make money at the expense and detriment of the consumers.

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The impact of product quality evaluation plays a wider role being a measure for consumer protection globally. Nigeria just like other third world countries where the level of education and public enlightenment is low, common diseases tend to inflict unnecessary toll on human lives. The recognition of this mayhem informed the federal government to establish the National Agency for Food Drugs Administration and Control (NAFDAC, 2019). Product quality is one of the decisive factors which have a certain impact on consumers' purchase, therefore several quality labels have been introduced to guarantee the quality and the originality of products. Furthermore, consumers can easily distinguish high quality products and make better decisions related to their purchase (NAFDAC, 2019).

The organization takes in concern monitoring service quality or product quality, the customer is only responsible for getting that service, that's why the organization has to take procedures to present the service in the right shape in case of an error with the service the organization most pursue and convince the customer. Product quality is a critical determinant of consumer satisfaction customer value delivery can satisfy customer demand, make the customer satisfied (Ma & Ding, 2017). Product features is an additional product of a product core that can add value to the product. The characteristics of a product are usually measured by the equivalent of individuals (in this case the user) that indicates the different product quality. Therefore, the development of quality products requires flexibility in order to adapt to market demand (Hu, Kandampully & Juwaheer, 2019).

Reliability is seen at the dimension relates to the emergence of a potential product experiencing a non-functioning situation at a time. Product reliability indicating quality level is very meaningful for consumers in choosing products. This is becoming increasingly important given the amount of reimbursement and maintenance to be incurred if a product that is considered untrustable is damaged (Salami, 2018).

Other dimensions related to the quality of goods are the suitability of the products with their industry standards. The conformity of a product in the service industry is measured from the level of accuracy and completion of time including calculation of errors, unanticipated delays and some other errors (Sugiyono, 2017).

Customer satisfaction depends on the performance product on the perceived expectations of the buyer. If the given product is not the same as the customers expect then consumers will feel dissatisfied. In other words, consumer satisfaction will be obtained if the product is given in accordance with the expectations of consumers (Kumar & Maull, 2020). Customers are influenced by expectations, service perceptions and quality perceptions. The impact is influenced by total satisfaction when the customer evaluates the

product or service. Satisfaction is an emotional response when the customer evaluates the difference in the spectra of a service with the perception of the outcome achieved (Brucks, Zeithaml, Naylor & Gillian, 2018).

Statement of the Problems

At the moment, the increase in services offered is getting more attention for the company. This case is because service quality can be used as a tool to achieve a competitive advantage. Implementation of service quality by a service company is to provide the best service quality for the customer with the goal of creating customer satisfaction. However, there are often differences between customer expectations and customer perceptions of the quality provided by the company. (Brucks, et al., 2018). But it is difficult for the firms to make a balance between quality and efficiency while trying to achieve company's objectives. Similar to product quality, customer satisfaction can occur at multiple levels in an organization for example, satisfaction with the contact person, satisfaction with the core product and satisfaction with the organization as a whole. Majority of the product could be handled by rice milling distribution agents in where supportive systems and human elements are working together. Downing (2020) noted that the knowledge, skills and abilities of salespeople have been largely studied by scholars but much more in face-to-face situation than in mediated environments like rice milling firms. Quality product is one of the most important weapons to build good customer relationship management and customer retention (Bennington et al., 2019). But there is no enough study related to product quality and customer satisfaction on rice milling firms unlike face to face service encounter more specifically in Mubi. It is on this regards that the study is carried out to examine the impact of product quality evaluation on customer protection in some rice milling firms in Mubi metropolis.

Objective of the Study

The main objective is to examine the impact of product quality on consumer protection of selected SMEs in Mubi, Adamawa State, Nigeria. The specific objectives are to;

- i. examine the impact of product features on customer protection in Mubi metropolis, Adamawa State
- ii. evaluate the impact of product reliability on customer protection in Mubi metropolis, Adamawa State
- iii. assess the impact of product conformance on customer protection in Mubi metropolis, Adamawa State

Research Hypotheses

The following hypotheses were formulated to guide this study

- HO₁ Product features do not have significant impact on customer protection in Mubi metropolis, Adamawa State
- HO₂ Product reliability has significant impact on customer protection in Mubi metropolis, Adamawa State
- HO₃ In Mubi metropolis, Adamawa State, product conformance has no major impact on customer protection.

LITERATURE REVIEW

Concept of Product Quality

Product quality is an essential policy in increasing company competitiveness as a form of achieving competitive advantage (Dodds, Monroe, & Grewal, 2018; Bonadonna, 2020). Product quality is everything that a producer can offer to be considered, and is used by consumers as a means of meeting one's needs or desires because product quality is an overall combination of product characteristics resulting from marketing, engineering, production and maintenance strategies that make these products usable meet customer expectations (Chen & Gayle, 2019). Crosby (1979) takes a different approach by defining quality as "conformance to requirements." His perspective stresses that a quality product consistently meets predefined standards without defects or deviations. Montgomery (2013) defines quality as the "inverse of variability," meaning that a high-quality product exhibits minimal variation from its design specifications and consistently meets customer needs. His definition is rooted in statistical quality control, where reducing variability ensures greater product consistency and reliability.

In this study product Quality control is divided into three categories i.e. product features, product reliability and product conformance,. These are discussed below:

Concept of Products Features

According to Ulrich and Eppinger (2020), product features encompass both technical and aesthetic elements that define how a product looks and functions. This perspective highlights that features are not only about utility but also about design appeal, which can significantly impact consumer perceptions and brand loyalty. Similarly, Lilien, Rangaswamy, and De Bruyn (2017) argue that product features enhance a product's usability, performance, and appeal to targeted customer segments. These features serve as key decision-making factors for consumers when evaluating similar products in the market. Crawford and Di Benedetto (2019) emphasize that product features represent the tangible and intangible aspects of a product that shape consumer perceptions and buying behavior. They highlight that features such as design, quality, and innovative functionalities contribute to a product's competitive edge. Expanding on

this, Trott (2021) explains that product features encompass design, functionality, and technological advancements, all of which play a vital role in shaping the overall customer experience.

Concept of Product Reliability

Product reliability means the ability of a service provider to provide the committed services truthfully and consistently (Blery, Batistatos, Papastratou, Perifanos, Remoundaki & Retsina, 2019). Customers want trustable services on which they can rely. This dimension relates to the emergence of a potential product experiencing a non-functioning situation at a time. Product reliability indicating quality level is very meaningful for consumers in choosing products. This is becoming increasingly important given the amount of reimbursement and maintenance to be incurred if a product that is considered untrustible is damaged (Chen, 2017). Product reliability is defined as the consistent performance of a product over its intended lifespan without failure under specified conditions (Blanchard & Fabrycky, 2014). This definition emphasizes the expectation that a product should function as designed over time without defects, ensuring customer satisfaction and operational efficiency. Another perspective defines product reliability as the probability that a product will perform its required functions without failure for a given period under normal usage (Kececioglu, 2003).

Concept of Conformance

Conformance is a fundamental concept in quality management and standardization. According to the International Organization for Standardization (ISO, 2015), conformance refers to the fulfillment of specified requirements, ensuring that a product, service, or process adheres to established standards. This definition emphasizes the importance of compliance with predefined criteria to achieve consistency and reliability. Similarly, Juran and Godfrey (1999) describe conformance as the degree to which a product or process meets design specifications, highlighting its role in maintaining quality and minimizing defects. Oakland (2003) defines conformance in terms of adherence to quality management principles and compliance with regulatory requirements. This definition is particularly relevant in industries where strict regulations govern product and service quality, such as healthcare and pharmaceuticals.

Concept of Consumer Protection

Consumer protection is the practice of safeguarding buyers of goods and services, and the public, against unfair practices in the marketplace. Consumer protection measures are often established by law (Van Loo, 2019).

Consumer protection is linked to the idea of consumer rights and to the formation of consumer organizations, which help consumers make better choices in the marketplace and pursue complaints against businesses (Lewis, 2019). A consumer is defined as someone who acquires goods or services for

direct use or ownership rather than for resale or use in production and manufacturing (Lewis, 2019). Consumer protection is linked to the idea of consumer rights and to the formation of consumer organizations, which help consumers make better choices in the marketplace and pursue complaints against businesses (Shah, et al., 2018). According to Ogechuku (2019), regulatory bodies or Agencies like NAFADAC and SON here in Nigeria have given all the authority or power to checkmate and defect any substandard product either manufactured here in Nigeria or coming from outside Nigerian and bring them to book.

Impact of Product Features on Customer Protection

Based on research by Djumarno and Said (2018) that better product quality will maintain our high level of customer satisfaction, which encourages customers to make future purchases. Product quality is also one of the elements taken into consideration by customers in deciding to make a purchase (Jahanshahi, Gashti, Mirdamadi, Nawaser & Khaksar, 2020). Satisfaction will be obtained if the customer has a positive value that the product is qualified. Customer satisfaction can be interpreted as a feeling of pleasure or disappointment from a customer when he compares his perceptions of the performance of a product or service with the desired expectations. Thus, customer satisfaction is important, leads to the financial success of a company, and contributes to the sustainable development of the company.

Impact of Product Reliability on customer Protection

The association between dimensions of service quality and customer satisfaction was investigated by Ibanez, Hartmann & Calvo, (2017). They found a significant relationship between reliability of services on the satisfaction level of customers. The literature reveals an increased degree of positive relationship between service quality, customer satisfaction and performance (both financial and non-financial) where face-to-face dealing between customer and employee is the only focus. Technology expansion has had a great impact on the choice of service delivery standard and services marketing strategies. This has yielded many prospective competitive advantages including augmenting of productivity and enhanced revenue creation from new services (Muyeed, 2018).

Impact of Product Conformance on Customer protection

In Gronroos opinion (2019) the perceived quality of service meets two dimensions of technical (outcome) and operational (process-oriented). He believes that technical dimension of service is what the customer gets from service and is measurable so as objective, because it is what customers sees in the end of serving process. On the other hand, the functional quality associated with how to get service and is not easily measured and also understood by the client mentally. In other words, the technical quality is the

practical result of the service while the operational dimension quality shows process how service provided. He expressed six specifications for the perceived quality of service to guidance for other empirical research and conceptual: Expertise and skills, attitudes and behavior, accessibility and flexibility, reliability and confidence, improved service and reputation. Santos and Boote (2019) says because both structure of satisfaction and quality of service have the field related to cognitive expectations and evaluations, in theory can link these two concepts with regard to factor of expectations. The distinction between customer satisfaction and service quality are considered an important issue for managers and service providers need to provide high quality services to meet customer satisfaction as their business objectives (Santos & Boote, 2019).

Theoretical Framework

Consumer Theory

Consumer theory is concerned with how a rational consumer would make consumption decisions (Martijn, 2020). The consumer theory arises because the consumer's choice sets are assumed to be defined by certain prices and the consumer's income or wealth. There are certain assumptions for this theory. The assumptions as stated by Lichtenstein et al., (2017) can be seen below: The assumption of perfect information is built deeply into the formulation of this choice problem, just as it is in the underlying choice theory (Blythe, 2019). Some alternative models treat the consumer as rational but uncertain about the products, for example how a particular food will taste or how well a cleaning product will perform. Some goods may be experience goods which the consumer can best learn about by trying the good. In that case, the consumer might want to buy some now and decide later whether to buy more. That situation would need a different formulation. Similarly, if the agent thinks that high price goods are more likely to perform in a satisfactory way that, too, would suggest quite a different formulation.

Arbitrage Pricing Theory

Contemporary, there are two theories of portfolio choices with reference to which risk diversification is more dominant i.e. Capital Assets Price Model (CAPM) and Arbitrage Price Theory (APT). The APT model states that the forecasted rate of return on assets depends on the unpredictable nature of macroeconomic variables which points out that factor risk takes more significance in assets pricing (Holbrook 2020). APT is comparatively a moderate diverse technique for analyzing the assets prices model.

APT model assumes that the stock prices were influenced partially and uncorrelated with most of the macroeconomics variables and these variables are not multi-collinear with each other. APT defines

that expected return on stock prices is composed on the capital gain plus the realization of risk premium (macroeconomics variables risk) during the course time (Walter et al., 2020).

For the purpose of this study, arbitrage pricing theory was adopted, the reason for chosen this theory is because, the theory deals with how price will be set based on the forecasted rate of return on assets depends on the unpredictable nature of macroeconomic variables which points out that factor risk takes more significance in assets pricing.

Empirical Review

Albari (2020) studied the influence of product quality, service quality and price on customer satisfaction and loyalty using a questionnaire and distributed to 96 respondents by convenience sampling. All calculations and tests use the SPSS program. The results of the analysis prove that all antecedent variables can influence loyalty variables, both directly and through satisfaction variables. Service quality has the biggest positive influence on customer satisfaction, while product quality contributes highest to loyalty. These results are also supported by descriptive calculations

Khan, Mubbsher Munawar; Fasih, Mariam (2020) carried out study on impact of service quality on customer satisfaction and customer loyalty: evidence from banking sector, Pakistan using stratified random sampling. Banks from both public and private sector are selected for sampling. Survey questionnaires were distributed among 270 customers of different banks. An 83% (225 respondents) valid response rate is yielded. Descriptive statistics, one sample t-test, correlation and regression are used to analyze the data. Findings indicate that service quality and all its dimensions have significant and positive association with customer satisfaction and customer loyalty.

Muhammad, Nurhilalia and Perdana (2019) conducted study on the impact of product quality, price, and distribution on satisfaction and loyalty using empirical/quantitative concept by using a survey as a data collection tool. The number of samples used was 179 eligible respondents who used Samsung smartphone devices for more than five years. Statistical testing tools use PLS with several testing stages such as the classical assumption test to the hypothesis testing stage. The study revealed that nine hypotheses proposed, as many as two hypotheses were proposed, namely intervening relationships involving Price and Distribution channel variables on customer satisfaction and customer loyalty. i.e. Product quality is the essential component affecting customer satisfaction and loyalty while distribution channel is a complementaty component that is no less important to measure the extent to which customer satisfaction expectations and customer loyalty are realized for the product quality of the products that

have been produced and marketed.

Asghar, Mohammad, Seyed, Khaled and Seyed (2019) address the following questions that are becoming increasingly important to managers in automotive industries: is there a relationship between customer service and product quality with customer satisfaction and loyalty in the context of the Indian automotive industry? If yes, how is the relationship between these four variables? The automotive industry in India is one of the largest in the world and one of the fast growing globally. Customer satisfaction and loyalty are the most important factors that affect the automotive industry. On the other hand, Customer service can be considered as an innate element of industrial products. Customer service quality, product quality, customer satisfaction and loyalty can be measured at different stages, for example, at the beginning of the purchase, and one or two years after purchase. The population of the study is all of the Tata Indicia car owners in Pune. Hypotheses of the study will be analyzed using regression and ANOVA. Results of the study show that there are high positive correlation between the constructs of customer service and product quality with customer satisfaction and loyalty. Little was discussed about how firms weigh their action, how well was it and its consequences as it concerned their customer thereafter in our local context.

METHODOLOGY

The study adopted causal survey research design. This study was carried out in 5 selected rice milling firms in Mubi metropolis. All the firms are located within Mubi Metropolis. The population of the study comprised all staff of 6 rice milling firms in Mubi metropolis i.e. totalling 93. Therefore, the researchers tends to carried out research on the whole population. Data for this study was collected through primary source.

The researcher adopted closed-ended type of questions, respondent is expected to only select from options provided. The questionnaire was designed on five points likert scale ranging from strongly agree (5) to strongly disagree (1). The questionnaires were administered personally by the researcher and were collected back after some days. Some of the instrument were adapted from the study of Ling & Shaheen, (2018) and Lidya (2017). Quantitative data collected were coded into Statistical Package for Social Sciences (SPSS) version 20.0 for windows, cross-checked for entry errors and analysed, whereas regression analysis was employed to test the relationship between the variables at 0.05 level of significance.

DATA PRESENTATION, ANALYSIS AND FINDINGS

During this research study, a total number of ninety three (93) questionnaires were distributed among the target respondents in the study area. Ninety two (92) were duly filled and returned to the researcher while only 1 (one) questionnaire could not be retrieved.

Hypotheses Testing

- H_0^1 Product features do not have significant impact on customer satisfaction in selected Rice Milling firms in Mubi metropolis, Adamawa State
- H_0^2 Product reliability has significant impact on customer satisfaction in selected Rice Milling firms in Mubi metropolis, Adamawa State
- H_0^3 In selected Rice Milling firms in Mubi, Adamawa State, product conformance has no major impact on customer satisfaction.

Table 1: Model Summary of the impact of product quality control relationship between customer satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.899 ^a	.791	.771	1.49163

a. Predictors: (Constant), PF, PR, PC, PD, PS

b. Dependent Variable: CP

(Source: SPSS Output, 2025).

Table 1 shows there is a significant positive relationship between product quality control and customer satisfaction ($r = 0.899$, $P < 0.05$). The model summary in table 1 reveals that the values of the coefficient of determination for model of the study, R^2 statistic of 0.791 (79.1%) shows that the model is a good predictor of the dependant' variable. This shows that the model explain about 79.1% variations in the dependant variable. The model shows that there is significant positive impact of product quality control and customer satisfaction in selected Rice Milling firms in Mubi metropolis, Adamawa State.

Table 2: Analysis of Variance of impact of product quality control on customer satisfaction

ANOVA ^b						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	616.715	1	715.455	315.2782	.000 ^a
	Residual	335.120	91	3.298		
	Total	951.835	92			

a. Predictors: (Constant), PF, PR, PC, PD, PS

ANOVA^b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	616.715	1	715.455	315.2782	.000 ^a
	Residual	335.120	91	3.298		
	Total	951.835	92			

b. Dependent Variable: CP

(Source: SPSS Output, 2025).

The result on the ANOVA in Table 2 shows that the model had an F-statistics of 315.2782 and a p-value = 0.000. This meant that the four variables were both significant ($P < 0.05$).

Table 3: Coefficients of Model of impact of product quality control and customer satisfaction

Coefficients ^a								
		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
Model		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	8.254	.762		12.134	.000		
	PF	.822	.051	.836	15.887	.000	1.000	1.000
	PR	.513	.016	.955	44.219	.000	1.000	1.000
	PC	.429	.011	.922	43.176	.000	1.000	1.000

a. Dependent Variable: CP

(Source: SPSS Output, 2025).

The result in Table 3 show that the coefficients of the impact of product features on customers satisfaction is statistically significant ($\beta = 0.836$, $t = 15.887$, $p < 0.05$). Moreso, coefficients of the impact of product reliability on customer satisfaction is significant value ($\beta = 0.955$, $t = 44.219$, $p < 0.05$). In addition, coefficients of the impact of product conformance on customer satisfaction is positively significant ($\beta = 0.922$, $t = 43.176$, $p < 0.05$). This means that there is significant and positive relationship between product quality control and customer satisfaction in selected Rice Milling firms.

Summary of Findings

The findings are based on the data collected from the field by the researcher. Some of the basic issues identified by the researcher after analyzing the data are as follows:

- i. Finding revealed that product features has significant positive impact on customer satisfaction in selected Rice Milling firms in Mubi metropolis, Adamawa State.

- ii. From the above analysis, it further revealed that product reliability has significant positive impact on customer satisfaction in selected Rice Milling firms in Mubi metropolis, Adamawa State
- iii. In addition, the finding revealed that selected Rice Milling firms in Mubi, Adamawa State, product conformance has major impact on customer satisfaction.

Discussion of Findings

The above analysis revealed that product features has significant positive impact on customer satisfaction in selected Rice Milling firms in Mubi metropolis, Adamawa State. This is in conformity with studies Jahanshahi, Gashti, Mirdamadi, Nawaser and Khaksar (2020), Moehammad (2018) and Ganiyu, (2017) who all found that product features has significant impact on customer satisfaction in an organizations.

Furthermore, the finding of this study revealed that product reliability has significant positive impact on customer satisfaction in selected Rice Milling firms in Mubi metropolis, Adamawa State. This finding affirmed with the studies conducted by Mueyed, (2018) and Muhammad, Nurhilalia and Perdana (2019) who all found that product reliability has positive impact on customers satisfaction and taste.

In the finding revealed that selected Rice Milling firms in Mubi, Adamawa State, product conformance has major impact on customer satisfaction. Studies conducted by Ranjbarian & Gholizadeh (2018), Ling and Shaheen (2018) and Pribanus and Muhammad (2019) who all found that product conformance has positive impact on customer satisfaction.

Conclusions

This study was able to conclude that product features has significant positive impact on customer satisfaction in selected Rice Milling firms in Mubi metropolis. The companies affirmed that their product are useful, their customers enjoyed the features in the product which make them satisfied and more desirable. It is also noted from the above analyses that product reliability has significant positive impact on customer satisfaction in selected Rice Milling firms in Mubi metropolis. The products of the companies are reliable, customer are retained because the companies put in place strategies that help them meet to meet their customers need and ensure reliability of product always to their customers. Furthermore, product conformance has major impact on customers' satisfaction. Because product is conformant with customers need, as customer requirements of a product is the company top priority, eventhough sometimes unanticipated delays usually affect customers' product conformance. i.e. The service quality is centered in providing customer with quality product.

Recommendations

From the above findings and conclusion the researcher was able to recommends that:

- i. The management of the selected Rice Milling firms should ensure that they adhere strictly good product features by monitoring all the phase of production and to provide all the necessary tools that are required to carryout effective and successful production with observation of all necessary features needed.
- ii. In ensuring product reliability, the management of the selected companies need to adopt good strategies that will help in satisfying and retaining customers' loyalty through providing good product that meets customer needed at appropriate time.
- iii. The management should ensure that effective strategies are put in place in order to produce a product that conforms customers' need, i.e. customer requirements of a product should be the company top priority, despite the unanticipated challenges encountered sometimes.

Suggestions for Future Studies

- i. Future studies should expand to include SMEs from various regions across Nigeria to provide a more comprehensive analysis.
- ii. Future studies should increasing the sample size and including a wider variety of SMEs from different sectors can provide more generalized and reliable insights.
- iii. Future studies should conduct longitudinal studies can help in understanding trends and the long-term impact of product quality measures on consumer protection.
- iv. Future studies should compare SMEs in Mubi with those in other states or countries could highlight best practices and areas needing improvement.

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