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Cost of Quality Management and Customers' Satisfaction in Nigerian Deposit Money Banks (A Case Study of Selected Banks in Uromi, Edo State)

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Abstract
This paper investigates the cost of quality management and customer satisfaction in deposit money banks in Nigeria using the banks in Uromi community as a case study. The study adopted a survey research design to specifically assessed whether or not customers' satisfaction is dependent on internal control, failure prevention and appraisal cost. The population of this study consists of five (5) selected deposit money banks within Uromi community in Edo state with a total estimated population size of 1854 staff. A sample size of three hundred and twenty-nine (329) was drawn from the population using purposive sampling technique. Three hypotheses were formulated for the study and tested at 0.05 level of significance. The instruments of data collection consist of questionnaire structured on a five-point Likert scale. The data which were collected were subjected to analysis, interpretation and summarization using the Pearson correlation co-efficient to ascertain information. The findings from this study shows that, the use of the value chain in deposit money banks delivers improving level of performance regarding cost and as well as making product with zero defect and waste in order to meet customers satisfaction.

Keywords: Quality Management, Customers' Satisfaction, Nigerian Deposit Money Banks, Uromi, Edo State.

Introduction
One of the core objectives of deposit money banks across the globe is the provision of quality banking services that will meet the expectation of its customers. Providing such

services require quality management strategies that would be cost effective with a high level of customer satisfaction. Quality management is a mechanism that can be used by the banks to gain competitive advantage. According to the International Organization for Standardization [ISO 10014:2006] Quality Management may be defined as a set of coordinated activities to direct and control an organization such as the banking industry in order to continually improve the effectiveness and efficiency of its performance. [United Kingdom's (Uk's) Chartered Quality Institute, 2007] states that only true measure of acceptable quality is customer satisfaction, which considers both objective and subjective interpretations of the needs and expectations of customers. In recent times, bank customers are often dissatisfied with the services received from the bank, the reason for this include not only those that are direct, but also those that may result from loss of customers, loss of market share and many hidden cost and foregone opportunities not identified by modern cost accounting system [Parast et al, 2022]. Quality cost is however categorized into the following internal failure cost, external failure cost, prevention cost and appraisal cost. At every point in time, when a customer is dissatisfied it leads to complain either on service, bank charge, rate etc. It was on that premise that the Central Bank of Nigeria established the Consumer Protection Office (CPO) to not only ensure that consumer protection is given the required attention that it deserves, but also enable financial services regulation in Nigeria align with international best practices.

[Schiffauerova et al, 2016], states that there seem to be a deficiency in the establishment of quality management system in the Nigeria banking sector as it faces pertinent quality issue such as cost overruns, rework, high maintenance cost, queuing system in bank etc.

It is on this background, that this study promises to help establish priorities for corrective action and also prevent misallocation of resources in their operation of deposit money banks (DMB). Thus, this work seeks to determine if the effect of cost of quality management is associated with customer satisfaction in the services of DMBs in Nigeria.

Aim(s) of the Study.

The aim(s) of this study is to investigate the impact of cost of quality management and customer satisfaction in deposit money banks and attempt to measure customer perception and service quality with a view to determine whether the effect of cost of quality management is related to customers' satisfaction.

Theoretical Framework.

Cost of quality management is defined or seen as methodology that allows an organization to determine the extent to which its resource is used for activities that prevent poor quality, that appraise the quality of the organization or product and services, and result internal and external failure. Three important theories are used to explain the cost of quality management. The first is rooted in the Edward Deming systems of profound knowledge, while the other two are Juran's project by project approach and the Crosby's theory of Conformance of quality standards.

a. Edward Deming System of Profound Knowledge Theory

This theory was first imitated by [Edward Deming, 1986. Deming defines quality in term of current and future need of the customer. He places emphasis on statistical thinking and statistical method. The system of profound knowledge is made up of four interrelated parts: theory of systems, theory of variation and theory of knowledge and knowledge of psychology.

b. Juran and Gryna Project-By-Project Approach Theory

Project by project approach theory was initially developed by [Juran and Gryna, 1988]. He stresses a balance between product features and free from deficiencies. As used by Juran, the word "product" refers to the output of any process, and the include goods as well as services. By features, he met technological properties of a product designed to meet the customer needs. Service organizations also possess feature such as promptness of delivery or courtesy extended. According to Juran, his picture of quality addresses products free from deficiencies (e.g. error in invoices, factory scrap, late deliveries. He pointed that this failure make trouble for the customers and as a consequence they become dissatisfied

c. The theory of conformance of quality standard

The theory of conformance of requirement was developed by [Philip B. Crosby, 1979]. He defines quality that it be measurable and clearly stated terms to help the organization take action based on tangible targets, rather than on bunch experience of opinions. He believes that management must measure quality by continually tracking the cost of doing thing wrong, which he refers to the price of non-conformance". To aid managers in tracking the cost of doing thing wrong, he developed the following formula: cost of quality (COQ) = Price conformance (POC) + Price of Nonconformance (PONC). Where price of conformance refers to the, cost of getting things done right the first time. While price of nonconformance provides management with information regarding the wasted cost and a "visible" indication of progress of the organization improves

Materials, Method and Research Instrument

This study makes use of the survey design because it is considered the most appropriate method for use as the goal is to elicit information about the variables from respondents. The study focuses on five (5) selected deposit money banks in Uromi community based on their performance from 2015-2024 based on their profit after tax indices. Selected banks include; First Bank of Nigeria plc, United Bank for Africa, Union Bank Plc, Access Bank, and Ecobank Nigeria. In order to ensure adequate representation of deposit money banks in Uromi community, Edo State, the study employed purposive sampling technique.

Information from the respondents constitute the primary sources of data derived using the survey method of data collection. Personal interviews and observation where also be carried out to test the reliability and validity of the responses in the questionnaires on randomly selected employees of the study areas.

The Taro Yamane formula as cited in [Benjamin, 2014] was applied to the respondents' population of the selected banks to determine the sample size. The sample size is as calculated below;

The Yamane formula was given as

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

Where n = sample size
N = Population
e = error limit

$$n = \frac{1854}{1 + 1854(0.05)^2}$$

n = 329

The question used in the questionnaire analysis required responses such as YES or NO, while others offered the respondents with 5 option of strongly Agreed (SA), Agreed (A) strongly Disagree, (SD) Disagreed (D) and Undecided (UD

- Data analysis techniques

Out of the 329 Questionnaires distributed, the once returned were edited, sorted, analyzed and summarized taking cognizance of the answers given in each question and watched with observations recorded and interview responses. At the end of the exercise, the product moment correlation (r) function was used in determining the relationship between both variables. This was done to test the degree of correlation and reliability of the instrument. Osuala (2005) posits that a high reliability of the instrument is indicated by a high correlation coefficient, and that a correlation coefficient of at least +0.80 is acceptable.

To establish the reliability and the validity of the product moment correlation coefficient as specified, the independent (cost of quality management) test will be applied. It is represented as:

$$N = \sqrt{\frac{r}{\frac{1 - r^2}{n - 2}}}$$

n - 2

Where

N = independent t-test

r = Correlation coefficient

n = number of years

- Decision rule

At 0.05 level of significance, the Ho (null hypothesis) was rejected where the test t-cal< t-table. The Ho was accepted where t-cal> t-table. The analysis of the research findings was aimed at accepting or rejecting the set hypotheses.

- Model specification

Based on the survey research technique, the multiple regression model was adopted. A functional relationship is postulated between customer satisfaction (CS), prevention cost (PC),

appraisal cost (AC), internal/external failure cost (IEC). The adopted model based on the Crosby theory is specified thus:

CS = F (PC, AC, IEC) - - - - (1)

Where:

CS = Customer satisfaction
PC = Prevention cost
AC = Appraisal cost
IEC = Internal/external failure cost

The regression model is expressed below as follows:

$CS = A_0 + A_1X_1 + A_2X_2 + A_3X_3 + A_4X_4 + e$ - - - (2)

Where**:**

A_0 = Constant
$A_1 – A_4$ = are unknown coefficient to be estimated
e = stochastic error

- Data treatment technique

The statistical method used for the validation of the research hypothesis formulated in chapter one was Pearson correlation co-efficient to certain information. Test with the formula;

$$r = \frac{n\Sigma xy - \Sigma x\Sigma y}{\sqrt{[n(\Sigma x^2)(\Sigma x)^2][n(\Sigma y^2)(\Sigma y)^2]}}$$

n = Number of years
Σxy = Sum of xy
ΣxΣy = Product of sum of x and sum of y
Σx = Sum of square of x
$(\Sigma x)^2$= Sum of x all squared
$(\Sigma y)^2$= Sum of y all squared
r = correlation co-efficient

DATA PRESENTATION AND ANALYSIS

Table 1: Personal Bio data of Respondents

Variable	Frequency	Percent
Gender**:**		
Male	163	49.5
Female	166	50.5
Total	329	100
Highest Academic Qualification:		
OND/HND	105	31.9
BSc. /BA	202	61.4
MBA/MSc.	22	6.7
Total	329	100

Variable	Frequency	Percent
Age		
21-30yrs	33	10.0
31-40yrs	182	55.3
41 -50yrs	43	13.1
51yrs and above	71	21.6
	329	100

Source: Field Survey, 2025

Table 2: Distribution of responses on internal control

Internal cost	SD	D	U	A	SA	Total
1. Addition of value-added cost induces customer satisfaction.	32	41	93	86	73	329
	9.7	12.5	28.3	26.1	22.2	98.8
2. Cost are incurred to minimize product failure	49	84	77	74	45	329
	14.9	25.5	23.4	22.5	13.7	100.0
3. Organization incurs additional cost to avert poor quality service delivery.	46	39	79	89	76	329
	14.0	11.9	24.0	27.1	23.1	100.0
4. Inter cost helps in lowering cost of operation.	28	51	79	93	78	329
	8.5	15.5	24.0	28.3	23.7	100.0

Source: Field Survey, 2025

Table 3: Distribution of responses on customer satisfaction

Customer Satisfaction	SD	D	U	A	SA	Total
5. Customer satisfaction is dependent on service delivery of a company more rapidly.	25	26	117	70	91	329
	7.6	7.9	35.6	21.3	27.7	100.0
6. Satisfaction can be enhanced when the speed at which organization responds to customer request are swift.	35	96	72	68	58	329
	10.6	29.2	21.9	20.7	17.6	100.0
7. Customer satisfaction can be increase when services are delivered as promised.	61	24	71	102	71	329
	18.5	7.3	21.6	31.0	21.6	100.0
8. Satisfaction is dependent on operational efficiency.	33	50	82	80	84	329
	10.0	15.2	24.9	24.3	25.5	100.0

Source: Field Survey, 2025

Data Analysis.

Table 1 presents the data on the personal characteristics of the respondents. The breakdown of the respondents according to their gender revealed that 163 (49.5%) respondents constitute the male gender, while 166 (50.5%) constitute the female gender. As regards the highest

educational qualifications of the respondents, 105 (31.9 percent) had OND/HND, the bulk of the respondents 202 (61.4 percent) have B.Sc. /B.A degrees, while MBA/MSc holders were 22 (6.7) percent. The age of the respondents shows that 33 respondents were within the ages 21-30 yrs. 182 respondents were within ages 31-40yrs; 43 respondents were within 41-50yrs and 71 were within 51yrs and above

The next sub-sections present the data on Sections B of the questionnaire. The responses are labelled: SA (Strongly Agree), A (Agree), D (Disagree), SD (Strongly Disagree).

Table 2 shows the distribution of responses on **internal control**. This table houses items 1 to 4. Item 1 revealed that 32 or 9.7% of the total sample strongly disagreed that addition of value-added cost induces customer satisfaction. 41 or 12.5% disagreed, 93 respondents were undecided; 86 respondents agreed, while 73 or 22.2% strongly agreed. Information on items 2 revealed that, 49 (14.9%) strongly disagreed that cost are incurred to minimize product failure. 84 (25.5%) disagreed, 77 were undecided; 74 (22.5 percent) agreed, while 45 (13.7%) strongly agreed. Response on number 3 shows that 46 or 14.0% of the respondents strongly disagreed that organization incurs additional cost to avert poor quality service delivery. 39 or 11.9% disagreed, 79 respondents were undecided, 89 or 27.1% respondents agreed, while 76 or 23.1% strongly agreed.

Table 3 shows the distribution of responses on customer satisfaction. This table houses items 5 to 8. Item 5 revealed that 25 or 7.6% of the total sample strongly disagreed that customer satisfaction is dependent on service delivery of a company more rapidly. 26 or 7.9% disagreed, 117 respondents were undecided; 70 respondents agreed, while 91 or 27.7% strongly agreed. Information on items 6 revealed that, 35 (10.6%) strongly disagreed that Satisfaction can be enhance when the speed at which organization responds to customer request are swift. 96 (29.2%) disagreed, 72 were undecided; 68 (20.7 percent) agreed, while 58 (25.8%) strongly agreed. Response on number 7 shows that 61 or 18.5% of the respondents strongly disagreed that customer satisfaction can be increase when services are delivered as promised. 24 or 7.3% disagreed, 71 respondents were undecided, 102 or 31.0 % respondents agreed, while 71 or 21.6% strongly agreed. Items 8 shows that (10.0%) strongly disagreed that Satisfaction is dependent on operational efficiency; 50 (15.2%) disagreed, 82 respondents were undecided, 80 (24.3%) agreed, while 84 (25.5%) strongly agreed.

Hypotheses Test.

Ho: There is no significant relationship between internal cost and customer satisfaction in banks.

H1: There is a significant relationship between internal cost and customer satisfaction in banks.

To test the above hypothesis, data from table 2 was used as independent variable – internal control (X), while data from table 5 was used as dependent variable – customer satisfaction (Y). However, using the Pearson Product Moment Correlation Coefficient for the hypothesis test, the result is as presented below:

Table 4: Pearson correlation coefficient result between internal cost and customer satisfaction

		Internal_cost	Custumer satisfaction
Internal_Cost	Pearson Correlation	1	.656**
	Sig. (2-tailed)		.000
	N	329	329
Customer Satisfaction	Pearson Correlation	.656**	1
	Sig. (2-tailed)	.000	
	N	329	329
Source: Field Survey, 2025			

The result shows that the correlation of 0.656 was significant at 0.05 level. This can be established through a p-value of 0.000 which was lower than the cut-off points of 0.05 needed for the acceptance or rejection of the null hypothesis. It follows therefore that since 0.000 was lower than 0.05; we reject the null hypothesis and accept the alternative hypothesis which stated that there is a significant relationship between internal cost and customer satisfaction in banks.

Discussions and Findings.

The study used primary data obtained from the respondents to test the hypothesis and the results are as follows: Hypothesis revealed that there is a significant relationship between internal cost and customer satisfaction in deposit money banks. This finding is in agreement with the position of [Horgren et al, 2008]; they affirm that as part of cost management, managers often deliberately incur internal cost for product modification, reduction of wastages, detailed planning and reengineering of services so as to create additional value in order to meet customer satisfaction. This notion creates absolute care in the entire value chain of deposit money banks to meet customers' satisfaction at all times.

Conclusion.

Deposit Money Banks' customers wants the banks to use the value chain to deliver ever improving levels of performance regarding cost and efficiency, and banks are under pressure to reduce the cost of services they sell. Customers also expect high level of quality and management is to design services that would meet their needs and wants as well as making product with zero defect and waste. To achieve this, no doubt the bank managers require adequate quantification of the cost of quality management to always meet customers satisfaction at all times. As part of the cost of quality management, the internal cost is incurred to enhance customer response time by propelling the speed at which the bank responds to customer request. To increase customer satisfaction, banks must complete activities faster and meet promised delivery date reliably. This cost ensures that the price attached to the services of the firms is acceptable to the customers and that the quality of the product and services are of zero defects while, the customer response time are swift in all ramification.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were proposed:

1. Management should deliberately incur internal cost to control organizational processes and service delivery procedures in a timely way to ensure that values are added to meet customer satisfaction.
2. Managements should be proactive by incurring prevention cost to deter all forms of defects and wastages while ensuring that their banks' value chain produces in line with customers' needs and wants.
3. Appraisal cost should be inculcated to always ascertain the capacity of the banking operations in meeting customer satisfaction.

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