

# Evaluation of Quality Function Deployment System on Customers' Patronage: An X-Ray of Nigerian Insurance Industry

Babatunde B.O (Ph.D)

Department of Business Administration, Faculty of Management Sciences Osun State University, Osogbo, Osun State, Nigeria

AWOSUSI O. O (Ph.D)

Department of Human Resource Development, Faculty of Management Sciences Osun State University, Osogbo, Osun State, Nigeria

## Abstract

This study was conducted to x-ray the nexus between Quality Function Deployment System and Customers Patronage in the operations of insurance company in Nigeria with primary objective of investigating how insurance companies can employ quality function deployment factors to improve customers' patronage in the face of economic crisis and environmental change. Survey method was used to collect primary data through administration of questionnaires on 278 respondents from the selected insurance companies. Regression analysis, ANOVA and standardized regression analysis were used to analyze the formulated hypotheses. The findings showed that ( $R^2=0.865$ , Adj.  $R^2=0.825$ , F-test=1242.8,  $P < 0.000$ , for Hypothesis 1); ( $R^2=0.883$ , F-test=1263.4,  $P < 0.000$  for Hypothesis 2) all the hypotheses were statistically significant at 5% level indicating that QFD compliance is very keen factor to customers' loyalty and patronage. Also, QFD variables have positive impact on customer patronage in the selected insurance companies. Therefore, the authors recommended that, flexibility in payment structure, fulfillment of claim and voice of customer satisfaction, should be reviewed from time to time by the management as major factors that will increase the rate of insurance patronage in Nigeria and this will ensure companies survival in time face of economic depression and build golden image in the faces of potential customers.

**Keywords:** Quality function Deployment, customers patronage, customers loyalty and Voice of customer satisfaction.

## Introduction

Insurance business in Nigeria, historically, can be traced to the actions of British merchants in 1874. These British merchants commenced their insurance business activities as agents for insurance companies in Britain, the major area of business being marine insurance. These agents operating in Nigeria packaged and organized insurance covers for imported and exported products. Some form of social insurance existed in Nigerian society long before the introduction of the modern insurance in Nigeria (Osoka, 1992). These social schemes evolved through the existence of extended family system and social associations such as age grades, and other unions. Some of the insurance system then shared responsibilities and that of a common pool, where members of the community contributed resources in order to assist and reduced the burden of each order in the event of loss, the coming together of people to help each other which can still be traced in some part of the country today.

The first insurance policy can be traced back to the time of the ancient Babylonian king Hammurabi who introduced the "Hammurabi Code". This code established the practice of forgiving a debtor his/her loan in the event of a personal catastrophe such as death, disability or loss of property (The lawyer chronicle magazine). The first agency of insurance in Nigeria came into force in 1918 when the Africa and East Trade Companies introduced the Royal Exchange Assurance Agency. Other agencies included Patterson Zochonis (PZ), and Globe, BEWAC's Legal and General Assurance and the Law Union and Rock (Jegade, 2005). There was an initial slow pace of the growth of the insurance industry in the country, particularly between 1921 and 1949. This has been traced to adverse effect of the World War II on trading activities both in United Kingdom and Nigeria. As soon as the war ended, business activities gradually picked up again, and insurance industry in Nigeria began to record remarkable improvement in growth (Gbede, 2003 as cited in Oke, 2012).

According to Osoka, while selling is concerned with creating demand for the products that have already been decided, marketing is directed towards identifying the needs and wants of consumers and planning to satisfy those needs. Hence, in this context, the necessity of understanding the needs and wants of consumers to marketing could be liken to the bone, the tendon, and the ligament of businesses without which no articulation can take place (Gbadamosi, 2000). Accordingly, marketers need to understand the attitudes of customers and propel quality services to meet their expectations.

Although the future of insurance industry in Nigeria appears bright, a number of unresolved problems still exist; of particular interest is the insurance marketing system, which has affected the consumption of insurance products. In Nigeria, this problem seems to be even more pronounced because of the level of literacy

of the Nigerian populace. Insurance has remained one of the least purchased items within the financial market. Records reveal that only about 10 Per cent of the Nigerian population have insurance of any sort (Mordi, 1990; Wilson, 2004; & Oworen, 1991).

In general, this negative marketability of insurance products has become a problem not only to the insurance industry, but has also affected economic development. The problem has existed for a long time and has increased somewhat with the sophistication of the Nigerian society which has grown knowledgeable in recent years (Ibok, 2006). However, the increased importance of insurance as a provider of financial services and of investment funds in the capital market is especially pronounced in developed economies whereas insurance consumption in Nigeria is still very low. Little wonder what will be the future of this all important industry if these problems continue unabated. On this basis, there is need to gain more understanding of the influence of the factors affecting customer preference for investing in insurance industry in Nigeria

### **Statement of the Problem**

The Nigerian economy, presently, is experiencing downturn in all relevant indices of growth and development. The current government is striving to design policies and strategies that will rescue the Nigerian economy out of the crisis. Thus, there is an increasing attention to all sectors of the economy, including the Nigerian insurance industry. However, despite the role played by insurance industry to individuals, businesses and economic development of the nation, it was discovered that people have poor attitude towards ownership and patronage of insurance policies (Browne & Kim 1993) while Omar (2007) in his study of life insurance identified poverty, low per capital income, lack of trust and confidence of insurance institution and lack of knowledge of insurance as being responsible for the poor patronages.

The large variation in insurance consumption across different economies of the world raises some important questions about what are the causes of this variation and thus, what factors have affected insurance consumption? Why is customer not satisfy with the activities and operations of insurance company? More so, empirical studies on insurance quality deployment functions and consumption of insurance products by customer on the other hand in Nigeria appears to be inadequate. As Mordi (1990) has rightly pointed out, figures are yet to be available in many activity areas of insurance. There are even questions of adequacy of such empirical data. Lack of available data and information invariably means lack of awareness and interest on the part of the consuming public. Also, its apparent role of quality function deployment seem relatively few people in Nigeria appear to be appreciating it. Some who buy insurance (especially motor vehicle insurance) do so because it is made compulsory by law. Hence, this study assessing the quality deployment function factors that determine customer loyalty in Nigeria insurance company.

### **Objectives of the Study**

The broad objective of this study is to examine the nexus between QDF and customer patronage in Nigerian insurance company. Specifically, the study aims to:

1. examine the relationship between QDF system and customers' patronage in Nigerian insurance company.
2. to determine the significant impact of Quality Function Deployment factors (accessibility, knowledge and awareness, service charge, customer relationship management, corporate image, flexibility in payment structure, fulfilment of claims on customers patronage relatively in Nigeria insurance company.

### **Research Questions**

Given the above identified problem existing in customer's preference for investing in insurance company. Thus, this research sets to answer the following questions:

- 1) Is there any relationship between Quality Functions Deployment System and customers' patronage in Nigerian insurance company?
- 2) Do Quality Function Deployment practices have significant impact on customer patronage in Nigeria insurance company?

### **Literature Review**

QFD is a proven tool for process that translates the voice of customer (VoC) into full level of customers' satisfaction through different processes. The quality and reliability of a product are predominantly determined in the early phases of the development process, and the relationship between customer requirements and design characteristics is the driving force of QFD methodology. The details of the methodology are set out in the works of Akao (1990), King (1989), Govers (2001), and Chakraborty and Dey (2007); however, for the purposes of the present study it is sufficient to observe that QFD enables an organisation to build quality into a product and control the development process from conception to the commencement of manufacturing operations.

QFD is thus a customer-driven, forward-thinking, and action-oriented strategic planning technique that is applicable to the development of products, services, businesses, and organisations. Before the advent of QFD, quality control (QC) methods were primarily aimed at addressing problems during or after product manufacture using quality standards, QC process charts, operating procedures, and so on to control the manufacturing process. QFD, in effect, takes QC back one step to the design and development of the product, with a view to ensuring that this is done in a manner that will satisfy the customer (Hofmeister, 1991; Moores, 2006). The aim is to incorporate the customers' preferences (as ascertained through surveys, interviews, and other means) into the various phases of the product development cycle (Buyukozkan, Feyzioglu, & Ruan, 2007; Gustafsson, 1993).

Oke, Ofiabulu, Banjo, Akanbi and Oyawale, (2008) their study combined Quality Function Deployment and Pareto analysis for hotel services improvement. The paper was aimed to improve the current quality management practices in hotel services. Pareto analysis method was used as a prioritisation tool for the purpose of financial Investment decision. The result showed that quality function deployment enhanced goodwill of the organisation as well as its profit margin and it also increased customers' patronage in hotel services.

Also, Khare and Sharma (2009) did a study on Conception to creation - quality function deployment in health sector. The paper was aimed to modify the quality function deployment application and applies it in a medical health care context. Descriptive survey method was applied and 150 respondents were taken as sampling units where the response percent was around 50% to 55%. The result showed that complete customer satisfaction can be mostly achieved through the integration of the voice of customer satisfaction increases and with it the probability of attaining business goals as determined by the market.

Homkhiew, Ratanawilai and Pochana (2012) carried out a study on application of a quality function deployment technique to design and develop furniture products. The paper aimed to evaluate the application of a quality function deployment technique to design and develop furniture products. Survey method was used in gathering the requisite data for the study. However, about 323 respondents returned the questionnaires which were properly filled. Regression method was used to analyzed the data obtained. It was found that products satisfaction was evaluated by customers composing of group of users and sales agents stores. The results revealed that the average satisfaction value of a new prototype increased from .08 to 2.71 points over the current products (an increase of about 54.87%). Hypothesis testing of customer satisfaction between the current and the new designs was found to significantly increase with regard to the QFD approach.

Qureshi, K.Khan, Bhatti, Khan and Zaman (2012) investigated Quality function deployment in higher education institutes of Pakistan. The paper aimed to assess the quality function deployment in higher education institutes of Pakistan. The study uses QFD as a tool for quality improvement and benchmarking in higher education institution of Pakistan. The study was based on primary data collected from 500 students which considered as customers and 500 teachers considered as technical describers from six Pakistan national degree awarding Universities. A self designed questionnaire was used for data collection. The data was analyzed using the technique of QFD on higher education institutes of Pakistan. On the basis of these feedback, a house of quality is developed, which highlighted the major concerned areas of quality improvements in teaching and also highlighted some benchmarks where other institutions are more productive. However, the current study improve on the study of Oke et al (2008) by looking beyond services improvement and integrate voice of customers satisfaction, fulfillment of claims as part of the major factors that enhance customers' patronage in the insurance companies.

## Methodology

Descriptive survey was adopted to investigate this study. Close-ended questionnaire was developed using 5-point Likert scale and administered to draw appropriate responses on the subject matter. There were 42 questions in all built to address the two major research questions. A total number of 300 copies of questionnaires were administered out of which 278 were properly filled and returned representing 93% rate of return. Two insurance companies were selected among the best 10 insurance companies in Nigeria based on customers' rating in 2014 namely; Aiico and Niger insurance companies (<http://nigerianfinder.com>) based on convenience of data gathering and accessibility for the research and samples were drawn from 150 respondents per company using simple purposive sampling technique. Data collected through the research instrument were analyzed using Statistical Packages for Social Sciences (SPSS version 20).

The data (responses) were also subjected to appropriate test of hypotheses using Regression analysis to ascertain the contributions of each predictor variables towards predicting changes in the criterion variable. All the analysis done was based on 278 respondents for the tested hypotheses to be either rejected or accepted at 5% level of significance. The method applied to select the sample size was the proportional allocation method of the stratified sampling technique. The total number of average customers in the selected companies is 852 (researcher survey, 2014).

Using the formula given by Cochran (1953) as cited in Israel (1992):

$$n = \frac{N}{1 + N(e)^2}$$

Where N= Population, n= Sample Size and e = Level of Precision

Since N= 852 and e = 0.05

$$\text{Therefore, sample size} = \frac{852}{1 + 852 (0.05)^2}$$

$$= \frac{852}{3.13} = 272$$

The sample size for this research study must be at least 272 customers. 300 copies of questionnaire were administered during the course of this study and 278 were returned.

### Models Specification

The hypotheses tested in this study include:

- **H<sub>01</sub>**: Quality Function Deployment (Voice of Customer Satisfaction) compliance is not vital for customers' loyalty and patronage.
- **H<sub>02</sub>**: Effective application Quality Function Deployment factors (accessibility, knowledge and awareness, service charge, customer relationship management, corporate image, flexibility in payment structure, fulfilment of claims) does not have impact on customers' patronage relatively in Nigeria insurance company.

In order to empirically test the above hypotheses, the following models were formulated to depict the relationship between the independent and dependent variables of the study:

**H<sub>01</sub>**: Quality Function Deployment (Voice of Customer Satisfaction) compliance is not vital for customers' loyalty.

$CLo = \beta_0 + \beta_1 QDF + \epsilon$  since objective here is to examine the influence of QFD system and customers Loyalty in the selected insurance companies.

Whzere CLo = Customers' Loyalty

QFD = Quality Function Deployment

**H<sub>02</sub>**: Effective application Quality Function Deployment factors (accessibility, knowledge and awareness, service charge, customer relationship management, corporate image, flexibility in payment structure, fulfilment of claims) does not have impact on customers' patronage relatively in Nigeria insurance company.

$CPat = \alpha + \beta_1 ACC1 + \beta_2 KNA2 + \beta_3 SEC3 + \beta_4 CRM4 + \beta_5 COI5 + \beta_6 FPS6 + \beta_7 FOC7 + \epsilon$

Where; CPat = Customers' Patronage

ACC1 = Accessibility by various customers.

KNA2 = Knowledge and awareness of the company product and services

SEC3 = Service Charges

CRM4 = Customer Relationship Management (voice of customer satisfaction)

COI5 = Corporate Image of the Organisation

FPS6 = Flexibility in Payment Structure

FOC7= Fulfillment of Claims

$\alpha, \dots, \text{constant}; \beta_1, \beta_2, \dots$  Estimate of parameters;  $\epsilon, \dots$  Error Term

### Results and Findings.

**H<sub>01</sub>**: Quality Function Deployment (Voice of Customer Satisfaction) compliance is not vital for customers' loyalty and patronage.

**Table 1** Analysis of Quality Function Deployment (Voice of Customer Satisfaction) compliance in line with customers' loyalty and patronage.

Null Hypothesis (H <sub>0</sub> )	R square	Adjusted R square	F	Sig.	Decision
<b>Quality Function Deployment (Voice of Customer Satisfaction) compliance is not vital for customers' loyalty and patronage.</b>	.865	.823	1242.83	0.000	Reject Ho
a.	b. Criterion variable: (Constant), Customers' Loyalty (CLo) c. Predictors: ( Voice of Customers Satisfaction)				

Source: Author computation, 2015 using SPSS 20.0

From **Tables 1**, it was found that the study has significant positive compliance and association between the variables measured i.e Voice of Customers Satisfaction and Customers' Loyalty in Nigerian Insurance company. ( $R^2 = 0.865$ , Adjusted  $R^2 = 0.825$ , F-value=1242.83 &  $p < 0.000$ ). Thus 86.5% of customers loyalty is attributable to insurance company's compliance to voice of customer satisfaction in Nigeria. Developing continuous concept of customers' orientation with wide range of understanding by insurance company will

enhance the rate of customer loyalty and eventually improve customers' patronage.. This result is in line with that of Oke, Ofiabulu, Banjo, Akanbi and Oyawale, (2008) who concluded that complete customer satisfaction can be mostly achieved through the integration of the voice of customer satisfaction with it the probability of attaining business goals as determined by the market.

**H<sub>02</sub>:** Effective application Quality Function Deployment factors (accessibility, knowledge and awareness, service charge, customer relationship management, corporate image, flexibility in payment structure, fulfilment of claims) does not have impact on customers' patronage relatively in Nigeria insurance company

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant QFD)	8.322	1.746		6.452	.000
ACC1	.253	.027	.105	1.332	.001
KNA2	.189	.044	.109	0.876	.004
SEC3	1.671	.117	1.67	2.3	.002
CRM4	.521	.791	.271	3.610	.003
COI5	-.171	.314	-.019	-.4150	.641
EPS6	2.494	.207	3.72	2.969	.002
FOC7	1.608	.814	3.21	4.882	.000

- a. independent Variable (Predictors): QFD (Items 1-7):  
 b. Dependent variables CPat (Customers Patronage)

ANOVA<sup>a</sup>

Model	F	Sig.	R <sup>2</sup>
Regression	12 63.429	.000 <sup>b</sup>	.883

a. Dependent Variable: (Customers Patronage)

b. Predictors: (accessibility, knowledge and awareness, service charge, customer relationship management, corporate image, flexibility in payment structure, fulfilment of claims),

The result in the Table 2 shows the level of influence of each of the predictor (accessibility, knowledge and awareness, service charge, customer relationship management, corporate image, flexibility in payment structure, fulfilment of claims.) Variables in the choice of insurance patronage by customers in Nigeria. The model indicates that, standardized beta coefficients (3.72, 3.21, 1.67, .271, .109, and .105) meaning that Flexibility in payment structure, Fulfillments of claim, Voice of customers satisfaction, Service charge, Knowledge and awareness and Accessibility by various customers influence customers patronage in the choice of insurance company in order of their important and weight respectively.

The result shows among the elements, the variable with the weightiest significant influence is Flexibility in payment structure (3.72), Fulfillments of claim (3.21) while the least influencing element is Corporate image (-.019). The implication is that Flexibility in payment structure, Fulfillments of claim factors greatly influence the customers' patronage of insurance company in Nigeria. Also, all the elements are statistical significant ( $P < 0.05$ , sig= .000 - .004) but COI is not statistically significant because sig = -0.641,  $P > 0.05$ . This means corporate image may not be major factors to be considered while searching for the insurance company of their choice in as much the evident reveal that payment structure and claims are not too rigid. This may even bring positive information through the words of mouth and portrait the image of the company positively to other potential customers.

Table 2 putting all the variables together, the joint results reflect R<sup>2</sup> value of .883, which means QDF elements accounted for 88.3% variance in customers' choice of insurance patronage in Nigeria. The overall regression model is statistically significant in term of its goodness of fit (F =1263.4, Sig 0.000), and F –, therefore reject Null hypothesis (H<sub>0</sub>) and the study concluded that effective application of Quality Function Deployment factors (accessibility, knowledge and awareness, service charge, customer relationship management, corporate image, flexibility in payment structure, fulfilment of claims) have positive impact on customers' patronage relatively in Nigeria insurance company.

### Conclusion and Recommendations.

With regards to factors that influence customers' patronage, flexibility in payment structure and fulfilment of claim demonstrated a strong positive influence on customers' patronage. The implication of this finding is that these elements are the most significant factors among the variables tested in this study. Corporate image showed

negative influence on customers' patronage. These results indicate that the evaluation of these factors without alignment is meaningless and it may have little impact on the customers' patronage. The result also demonstrated that the combination of these attributes has strong influence on customers' patronage. Thus, to increase customer patronage, insurance companies in Nigeria should therefore focus on improving these attributes that have been identified as key success factors to customers' patronage in Nigeria.

Also, management of this company should not just rely on profit margins as a good indicator of business performance. Rather, they should develop strategies that better capture voice of customers' satisfaction. Customer satisfaction strategy helps companies to compare their performance against customer standards, compare customer standards against internal process and identify opportunities for improvement and these will assist in term of building golden image of the company services in the faces of potential customers.

## REFERENCES

- Akao, Y. (Ed.). (1990). *Quality function deployment, integrating customer requirements into product design*. Cambridge, MA: Productivity Press.
- Browne, M. J. and Kim, K. (1993). An international analysis of life insurance demand, American risk and insurance (Abstract). *The Journal of Risk and Insurance*, 60 (4), 616-634.
- Buyukozkan, G., Feyzioglu, O., & Ruan, D. (2007). Fuzzy group decision-making to multiple preference formats in quality function deployment. *Computers in Industry*, 58, 392-402.
- Chakraborty, S., & Dey, S. (2007). QFD-based expert system for non-traditional machining process selection. *Expert System with Applications*, 32, 1208-1217.
- Cochran, W.G. (1953). *Sampling Techniques*. John Wiley & Sons, New York, 76.
- Gbadamosi, T. (2000). Consumers' Redemption: Whose Responsibility? *International Journal of Management Sciences and Information Technology*. 1 (1), 46 -54.
- Govers, C. P. M. (2001). QFD not just a tool but a way of quality management. *International Journal of Production Economics*, 69, 151-159.
- Gustafsson, A., 1993. QFD and conjoint analysis: the key to customer oriented products', MSc thesis. *Division of quality technology, department of mechanical engineering*, Linkoping; Linkoping University.
- Hofmeister, K. R. (1991). Quality function deployment: market success through customer-driven products. In E. Graf & I. S. Saguy (Eds.), *New York, Food product development from concept to the marketplace* NY: Van Nostrand and Reinhold 189-210.
- Homkhwie, C., Ratanawilai, T. & Pochana, K. (2012). Application of a quality function deployment technique to design and develop furniture products. *Journal of Science and Technology* 34 (6), 663-668.
- [Http://nigerianfinder.com/10-best-insurance-companies-in-Nigeria](http://nigerianfinder.com/10-best-insurance-companies-in-Nigeria).
- Ibok N. (2006). Determinants of insurance consumption in the South- South zone, Nigeria. Unpublished Ph.D thesis, Faculty of Management Sciences, University of Calabar, Nigeria.
- Jegede M.I. (2005). A comprehensive analysis of the insurance Act 2003 and its implication on the insurance business environment. Issues in Merger and Acquisition for the insurance industry. A proceeding of the 2003 NIA Workshop on insurance ACT 2003. (ED) 61-78.
- Khare S. & Sharma J. (2009). From conception to creation – quality function deployment in Health Sector. *Mathematics and computers in Contemporary Science* ISBN:978-1-61804-152-4, 84-89.
- King, B. (1989). *Better designs in half the time – implementing QFD quality function deployment in America* (3rd ed.). Methuen, MA: GOAL/QPC.
- Mordi O. (1990). Managing insurance industry towards a better public image. *Journal of West African Insurance Companies Association (WAICA)*, 14.
- Moore, B. M. (2006). Radiation safety management in health care – the application of quality function deployment. *The Society and College of Radiographers*, 12, 291-304.
- Oke, C.O., Ofiabulu, A.A, Banjo, O.G. & Oyawale F.A. (2008). The combined application of quality function deployment and Pareto analysis for Hotel Services improvement. *Journal of Production and Quality Management (IJPQM)*, 3 (2-3) 173-178.
- Oke. M.O (2012). Insurance sector development and economic growth in Nigeria. *African Journal of Business Management* 6 (23), 7016-7023.
- Omar, O. E. (2007). The retailing of life insurance in Nigeria: An assessment of Consumers' attitude. *Journal of Retail Marketing Management Research*, 1 (1), 41-47
- Osoka, O. (1992). *Insurance and the Nigerian Economy*. Lagos: Panache Publication
- Sigma. (2005). World Insurance in 2005: Moderate Premium Growth and Attractive Profitability, Sigma series (5). 2006.
- The magazine for the African Lawyer: The reform of insurance companies and its transformation of Nigeria's financial sector.
- Wilson R (2004). *Modern business budgeting*. New York: Alexander Hamilton press.