

EFFECT OF CUSTOMER RELATIONSHIP MANAGEMENT ON CUSTOMER RETENTION AND LOYALTY IN THE NIGERIAN MOBILE TELECOMMUNICATIONS INDUSTRY

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Abstract

The study was conducted to assess the effect of customer relations management as an independent variable on customer retention and customer loyalty as the dependent variables, in the Nigerian mobile telecommunications industry. The study was motivated by the problem of incessant customer complaints and exponential level switching back and forth between service providers by many customers. The study covered MTN, GLO, Airtel and 9Mobile because they are the four major mobile telecommunication companies operating in Nigeria. The study was restricted to the federal capital territory Abuja for its national centrality, administrative nature and housing of head or regional offices of the sampled companies. The study adopted a survey design and made use of primary data that was collected using a five-point Likert scale structured questionnaire. The population of the study was all telecoms' customers in Abuja from which a sample size of 400 was determined using the Yamane (1973) formula. Ordinal regression technique was used to analyse the data and test the formulated hypotheses. The study found that customer relationship management has a positive and significant effect on customer retention, but a positive and insignificant effect on customer loyalty. The study therefore recommended that CRM practices on customer retention should be continued, while CRM practices on customer loyalty should be improved upon.

Keywords: Customer, Relationship Management, Retention, Loyalty, Telecommunications

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Introduction

The current global competition coupled with the regular economic fluctuations has led to the need for both the product and service industries to plan and monitor their customer's reactions, (Abdullateef et al, 2010). Anderson (2011), states that the business environment has become more dynamic than it was 50-60 years ago. These dynamics in the last century have forced organisations to seek new strategies to remain competitive and successful owing to increased competition. In the present times, organizations focus more on customers' needs and wants to achieve customer satisfaction and loyalty rather than on products or services. Customer Relationship Management (CRM) focuses on increasing profitability and assisting organisations create long – term relationships with their customers making the customers feel they are a part of the organisation. Many organisations have shifted focus from just attracting customers, but are working at building long term relationships with both local and foreign customers, suppliers, employees, distributors and the general public (Dominici & Guzzo, 2010).

Globalization, world deepening economic woes, faded product differences and increasing customer sophistication have led to shrinking markets and increased competition. As a result, customer satisfaction, customer loyalty and customer retention are becoming more critical for firms. One way for organizations to retain their client base and ensure repeat purchases is to develop a data-base customer-focused management strategy that aims to increase customer satisfaction by cultivating long-term relationships (Appiah-Kubi & Doku, 2010). With emergence of new technologies marketers are now able to access a wider market, understand each customer better, choose whom to do business with and better manage customers' behaviour and attitude. As a result, there is a growing demand for Customer focused approach to marketing.

A key component of many customers focused initiatives today is the implementation of Customer Relationship Management (CRM). Businesses such as supermarkets, banks and mobile telephony are realizing the importance of CRM, and it's potential in helping them achieve a competitive edge through building customer relationships. These organizations are already changing their business processes and building technological solutions that enable them acquire new customers, retain the existing ones and maximise their life time value.

Customer relationship management is considered as one of the most effective strategies to retain and increase customers which will eventually result in profitability and customer satisfaction (Wu & Lu, 2012). Ideally, CRM brings benefits to the organizations that generate a lot of information about customers and is therefore suited to the hotel industry, taking into consideration that hotels gather a lot of data about their customers (Nguyen *et al*, 2007). The telecommunications industry, just like any other business must be competitive enough to be able to survive in the ever-dynamic business environment. It is therefore important for organizations in this industry to focus on retaining their customers by implementing CRM (Al-Azzam, 2016). Customer relationship management (CRM) is one of the major sources of competitive advantage in the world today. Furthermore, CRM has become an extensively accepted tool that supports customer-oriented organizations decisions (Mohammed, Rashid & Tahir, 2014). Organizations are using CRM to increase sales and revenues by focussing on customer retention and customer loyalty (Banga, Kumar & Goyal, 2013).

Several organizations including telecommunication companies spend a significant part of their time, energy and resources chasing new business. Even though it is important to replace lost business, grow the business and expand into new markets, one of the primary goals is to keep existing customers and enhance customer relationships (Weinstein, 2002). Thus, the cost of acquiring new customers can be up to 10 times the cost of retaining existing ones, and even a small increase in retention rates can add thousands of naira to revenue. Although finding new customers is very important, the emphasis is shifting towards retaining profitable customers and building lasting relationship with them. Companies have also discovered that losing a customer means losing not just a single sale but also a life time's worth of purchase and referrals. In effect, the double goal of marketing is to attract new customers by promising superior value and retain current customers by delivering satisfaction (Kotler & Armstrong, 2011).

CRM is premised on activities aimed to developed full-knowledge about customer behaviour and preferences in order to initiate programs and strategies that encourages customers to continually enhance their business relationship with the company (Parvatiyar & Sheth, 2011). The strategies of customer relationship management are anticipated to curtail occurrence of service failures that motivate customer to switch in the telecoms industry (Uppal, 2008; Sharma, 2011). Furthermore, Verhoef (2003)'s study demonstrates that, CRM positively

affects customer satisfaction. Verhoef and Donkers (2001) confirmed that CRM allows telecommunications companies to employ strategies with the help of customer databases in administering personal customer relationships effectively towards satisfaction. Customer relationship management has typically been viewed as an important determinant affecting customer satisfaction. The connections between customer relationship management, customer retention and customer loyalty are worth studying in the competitive Nigerian telecommunications market.

In the past one and half decade, there has been persistent complaints by customers and switching between service providers in the Nigerian telecoms industry signifying dissatisfaction and disloyalty in the industry. Argument abounds that such phenomenon is attributable to the inability of telecommunication firms to appreciate and apply the principles of customer relationship management dimensions in the pursuit of customer satisfaction and other measures of customer-based performance in the telecommunication industry. In addition to the above problem of the study, there is stiff competition in the telecommunication industry in Nigeria, and one of the key issues are the company's inability to practice effective customer relationship management to achieve customer satisfaction in order to retain its existing customers and look for new ones. The subject of customer relationship management and customer-based performance of firms has become a national issue in the Nigerian telecommunication market. In spite of the important role of the telecommunication industry, there is little information in the industry concerning customer relationship management to address the needs of customers and formulate effective relationship management dimensions geared towards maximised customer-based measures of performance in the industry.

The core argument from academicians and researchers is that, CRM practices can support organizations to achieve marketing productivity through establishing strong relationship with the customers in competitive markets. Thus, when organizations concentrate on customers by practicing CRM strategies, they can understand their needs and provide greater value which will improve company's position in the competitive market. However, the effectiveness of CRM to achieve customer satisfaction remains sceptical among telecommunication firms. Telecommunication firms in Nigeria perceive CRM operations as purely technological rather than delivering customer needs to gain customer attraction, retention, satisfaction, loyalty and value.

Despite numerous studies with no consensus of findings such as Peppers and Rogers, (2016), ElKordy (2014), Kumbirai and Nyasha (2014), Mohammed (2014), Poku, Zakari and Soali, (2013), Kapiki (2012), and Buttel (2010) to mention a few, there is a relatively low literature on the effects of CRM on customer satisfaction in the telecommunication industry and to examine the influence of CRM practices on customer satisfaction in the telecommunication industry. Furthermore, there is no research conducted to examine CRM and its effect on customer-based measures of performance in the Nigerian telecommunication industry. The study sought to fill this empirical gap by examining the effect of customer relationship management on customer retention and loyalty.

Based on the problem of the study, the study seeks to answer the following questions:

- i. What is the effect of CRM on customer retention in the Nigerian telecoms market?
- ii. How has CRM affected customer loyalty in the Nigerian telecoms market?

The main aim of the study is to explore the effect of customer relationship management on customer retention and loyalty in the Nigerian telecommunication industry. The specific objectives include to:

- i. ascertain the effect of CRM on customer retention in the Nigerian telecoms market; and
- ii. evaluate the effect of CRM on customer loyalty in the Nigerian telecoms market.

On the basis of the specific objectives of the study, the null hypotheses stated below were tested in order to make conclusions and recommendations:

Ho₁ CRM has no significant effect on customer retention in the Nigerian telecoms market.

Ho₂ CRM has no significant effect on customer loyalty in the Nigerian telecoms market.

This study intends to help stakeholders in the telecommunications sector to understand the empirical and the level of relationship between CRM and customer-based performance. The findings of the study are expected to create cognizance on informed decision making processes. This will greatly enhance the quality of decisions for the decision makers in the telecommunication industry. In addition, the investors in the telecommunication industry are expected to appreciate the importance or otherwise of CRM related investments.

Policymakers in the Government are instrumental in giving the direction of social economic activities in the country. The findings of this study could act as the requisite guide to policy makers and telecommunications sector regulators in enhancing the existing customer relationship management frameworks. In this, the models that were used in this study can also be replicated by policy makers in verifying the influence of various policies in the telecommunication industry on customer-based performance.

The results of this study would hopefully be significant in the sense that it would enable telecommunications companies to better understand why customers defect; the effect of customer relationship management and the various motivational factors which could be harnessed to inspire customers to retain them to increase and sustain profitability. The information generated from this study serves as a guideline to all owners of telecommunications firms, stakeholders in the telecommunication industry in Nigeria and members of the general public by enabling them to be aware of CRM strategies used by telecommunications firms in Nigeria, the impact of those CRM strategies on customer satisfaction and the challenges they face in implementing those strategies.

It is worth noting that this study also contributes to enhancing the existing literature in the telecommunications industry. The results of the study are anticipated to support the findings of other studies mentioned in the literature and they can be of explicit interest and probable value to managers responsible for adopting CRM dimensions in the telecommunications industry as well as beyond the specific context of telecommunications services. In academia, additional research on the basis of these findings can add to the present pool of knowledge by further probing CRM submissions in another services sector. This study also explores and recommends on various research gaps which will enhance further research by scholars.

The study assessed the effect of customer relationship management on customer retention and customer loyalty in the Nigerian telecommunications industry in the year 2021. The study was carried out among telecommunications firms who have their operating branches in Abuja. Abuja is selected as the geographical scope of the study of its administrative nature in Nigeria

where it is expected that all telecommunications firms must have their regional or head offices located in the federal capital territory. The study focused on the role of customer retention and customer loyalty as the dependent variables while customer relationship management (CRM) was the independent variable for the study.

Literature Review

Concept of Customer Relationship Management (CRM)

According to Swift (2011) CRM is defined as an enterprise approach for understanding and influencing customer behaviour through meaningful communications in order to improve customer acquisition, customer retention, customer loyalty and customer profitability. A strategic approach that enables organizations to use internal resources (i.e. Technology, people, and process) to manage the relationship with customers in order to create a competitive advantage and improve an organization's performance (Mohammed & Rashid, 2012).

Kincaid (2003) defined CRM as the strategic use of information, processes, technology, and people to manage the customer's relationship with your company (Marketing, Sales, Services, and Support) across the whole customer life cycle. Parvatiyar and Sheth (2001) defined CRM as a comprehensive strategy and process of acquiring, retaining, and partnering with selective customers to create superior value for the company and the customer. It involves the integration of marketing, sales, customer service, and the supply-chain functions of the organization to achieve greater efficiencies and effectiveness in delivering customer value.

Reinartz (2004) conceptualized CRM from the customer perspective as a systematic process to manage the customer relationship initiation, maintenance, and termination across all customer contacts points in order to maximize the value of the relationship portfolio. Padmavathy (2012) also defined CRM as a set of customer-oriented activities supported by organizational strategy and technology, and is designed to improve customer interaction in order to build customer loyalty and increase profits over time. The definitions above accentuate CRM as a complete set of approaches for administering customer relations in terms of marketing, customer and support services.

Concept of Customer Retention

Customer Retention is the solid activities a firm undertakes to prevent customers from defecting to alternative firms. Successful customer retention starts with the first contact and continues throughout the entire lifetime of the relationship. It refers to keep customers loyal to the brand and the organization on a long range (Kipkosgei & Njeru, 2014). Satisfying customer's needs and desires and considering their suggestions and opinions gives a strong push to improve the product and/or service that drive a customer retention to the brand and organization, in other words it's about exceeding customer's expectations so that they become retained advocates for your brand.

Concept of Customer Loyalty

This is a positive (or negative) attitude of the customer toward the business organization and its products and services. It is considered important because the loyal customer will contribute to organization in long-range. Therefore, customer loyalty is basically related to provider's ability to retain customers and persuade them to recommend its products and services to potential customers (Zeithaml, 2000). Often, there are three levels of loyalty according to the model of customer loyalty; a) strong loyalty where the customer is willing to buy all the times, b) moderate loyalty where the customer has a loyalty to more than two trademarks, and c) weak loyalty where the customer's preferences are varied from brand to

another (Casalo, 2010; Lin & Wang, 2006), The purpose of customer loyalty is to retain the customer as long as possible if not always-preserved.

Empirical Review

Customer Relationship Management and Customer Retention

The study by Moudud-UI-Huq et al., (2021) aimed to evaluate customer relationship management's impact on tourist retention a specific, attractive, and amazing tourism destination: Saint Martin Island. By reviewing the literature, the authors developed a proposed model and for testing this relationship on data collected from 328 respondents using online media. They used PLS-SEM analysis in SmartPLS3.2.1 software. The outcome of the analysis revealed that customer relationship management (CRM) has no significant relationship with tourist retention of Saint Martin Island.

The study by Kankam and Ama (2019) sought to assess Customer Relationship Management practices and Customer Retention in NSIA Insurance. The study was conducted to identify critical factors necessary for customer retention in carrying out customer relationship management practices in the selected insurance company and to develop effective customer relationship management practices to manage customer retention for sustainability within the insurance industry using NSIA Insurance as a case study. Well structured questionnaire and face-to-face interview were the methods adopted for the investigation of the study. A sample size of 40 respondents was considered, they were made up of customers and the staff who are fully involved in customer relationship management of the insurance company. Data collected from the completed questionnaires and the interviews were grouped into frequency tables and expressed in percentages. The researcher relied on the SPSS in interpreting the collected data. The study shows that even though NSIA insurance has policies on customer relationship management practices, these policies are not carried out fully to accomplish the ultimate goal of customer retention. This implies an insignificant effect of CRM on customer retention.

Nischal (2015) aimed to increase the understanding of customer retention by investigating a service company able to improve their customer retention through customer relationship management. Companies may choose to apply different parts of customer relationship management to their businesses through technology and other means of communication with their customers, various training programs and other resources devoted towards the employees of the company. Evaluating the past and present behaviour makes it possible for the company to adopt the most effective business strategy. A qualitative and semi-structured research method was adopted in order to explore the relationships between the service providing company and their customers to promote their customer retention strategy. The results of the research indicate that to be able to attract and keep customers by increasing the customer retention rate, companies have adopted a proactive approach devoting time and resources to stay in touch with their customers. This way companies not only can increase their competitive advantage but can also develop a sense of seeking benefits not just for the company but also for their customers. The conclusions are that companies have to realize that they have to do things right by listening to their customers and adopting a strategy based on mutual agreement with the customers. The company has a better chance to overcome their competitors and be more efficient in building relationships with their customers by promoting customer retention.

Customer Relationship Management and Customer Loyalty

Gopalsamy and Gokulapadmanaban (2021) titled their study "Implementation of Customer Relationship Management (CRM) Enhance the Customer Loyalty? An Empirical Research in Banking Sector". The study concentrated on evaluating the consequence of customer

relationship management practices on customer loyalty with 779 respondents who were the clients of public and private sector banks located in India and were selected using simple random sampling technique. Various quantitative techniques were carried out and the results emphasized that the CRM has a positive influence on loyalty through customer knowledge management, customer satisfaction, and customer trust, and all were all found as significant drivers to customer's trustworthiness.

The study by Moudud-UI-Huq *et al.*, (2021) aimed to evaluate customer relationship management's impact on tourist loyalty of a specific, attractive, and amazing tourism destination: Saint Martin Island. By reviewing the literature, the authors developed a proposed model and for testing this relationship on data collected from 328 respondents using online media. They used PLS-SEM analysis in SmartPLS3.2.1 software. The outcome of the analysis revealed that customer relationship management (CRM) has a significant positive impact on tourist loyalty.

Hasan (2021) study conceptualized sustainable customer relationship management (susCRM) based on several theories of customer relationship management (CRM) and primary data from 150 customers and 60 employees of 30 restaurants through personal observation and in-depth interviews. The study's findings showed that sustainable customer relationship management (susCRM) regenerates customers' needs, wants, and demands, making an individual customer loyal to a restaurant.

A study by Mulyana (2020) aimed to examine the effect of Customer Relationship Management (CRM) on customer loyalty. The unit of analysis in this study was Bank Jabar Banten (BJB), and the observation unit is the management of the bank. The population was customers of BJB Precious, which is a service from BJB Bank intended for high-net-worth individuals. Fifty respondents of BJB Precious customers in Bandung city were taken as sample. The data were analyzed using Partial Least Square (PLS). The results showed that CRM proved to have a significant effect on customer loyalty of BJB Precious in Bandung. The result of this study was expected to have an implication for the management of BJB bank, namely that the efforts to increase the implementation of CRM of BJB Precious will improve the customer loyalty.

Saputra and Ekonomi (2019) examined the effect of Customer Relationship Management (CRM) on banking customer loyalty in Batam city of Indonesia through customer satisfaction as a mediating variable. The respondents of this study are the customers of commercial banking in Batam collected by using purposive sampling method. This study took 500 respondents as sample those are registered as customers at 155 commercial bank offices based on data from Indonesia Central Bank in 2016. The model developed aimed to measure customer loyalty through the implementation of customer relationship management (CRM) strategy of banking services industry in Batam. The result of the study indicated that CRM has a positive impact on loyalty through satisfaction as a mediating variable.

Isnalita and Soewarno (2019) carried out a study on the effect of Customer Relationship Management (CRM) to customers' loyalty. The research aimed at exploring the effect of customer relationship management (CRM) which based of several indicators, such as information and data, process, technology, human resource; focused on customers' loyalty of PT Gojek Indonesia. The analysis uses structural equation modelling (SEM) with warp PLS version 5.00 program to examine the hypothesis. There were 216 respondents in the study. The respondents were the Gojek Indonesia's customers. The result of the research showed that there was positive effect and significance between the CRM of Gojek Indonesia's service provided and costumers' loyalty.

Siddiqi *et al.* (2018) assessed the impact of Customer Relationship Management on customer loyalty: evidence from Bangladesh's Banking Industry. The study was conducted on private and public banks of Bangladesh with a sample of 210 respondents to unveil the interdependence among the dimensions as well as their cumulative effect on customer loyalty. For analysis SPSS 16.0 has been used for descriptive analysis and AMOS 16.0 has been employed for measuring the impact of the exogenous variables such as trust, complaint handling and technology adoption as well as on the endogenous variable namely customer loyalty. The study unfolds the significant relationship of all of the three independent variables on the dependent variable, customer loyalty.

The study by Karsalari *et al.*, (2017) was carried out to assess the Impact of Customer Relationship Management on Customer Loyalty with the Mediating Role of Customer Commitment in LG Company (Goldiran) Tehran City. The study used correlation and descriptive approach. The method of data collection was the survey. The population include all customers of LG Company (Goldiran) in Tehran City. The research sample consisted of 384 employees of the company who were chosen through cluster random sampling using the Morgan table. Reliability of Customer Relationship Management, Customer Loyalty and Customer Commitment was ascertained with alpha values of 0.86, 0.84 and 0.79 respectively. The method of data analysis is used was Descriptive and inferential statistics, where normal data distribution was tested through Kolmogorov-Smirnov test. The software used were LISREL and SPSS software. The findings showed that Customer relationship management has Positive and significant impact on customer loyalty and customer commitment.

The important aim of reviewing the literature is to identify the gap. The research gap in the research is an area where no previous information is available. The previous studies done in this area of CRM strategies in the telecommunication industry has put a greater focus on how to implement CRM strategies in telecommunication and leaving behind the performance, the challenge and customer retention after implementing CRM. The study sheds a light on the assessment of customer relationship management strategies used by telecommunication firms in Nigeria.

Theoretical Framework

The Identify, Differentiate, Interact and Customise (IDIC) Theory

The theory was developed by Peppers and Rogers (2004). According to this theory, organizations should take the four actions: identify, differentiate, interact and customize, in order to build closer one-to-one relationships with customers. The organizations identify who their customers are and build a deep understanding of them. Information such as name, address and purchase information must be collected across the company, at all points of contact (Ling, 2017). It may seem simple and obvious for a firm to gather information; however, many times the information is spread out between departments and not organized in such a way that information can be linked quickly to each individual customer (Peppers & Rogers, 2016). Each customer represents a different level of value to the company. The priority here is to identify the different needs of each customer, estimating the value and importance of each customer and tailor the business offer to each customer (Bagdoniene & Kazakeviciute, 2009).

In each interaction with the firm through the touch- points, the firm should continue to gather knowledge of preferences; data that can help them further customize and continue to give quantified value to customer, an example could be not to have the most valued customers waiting in any queues for service (Peppers & Rogers, 2016). This theory provides a basis for

hotels to use technology infrastructure to identify, differentiate, interact and customize their services to customers to enhance customer loyalty. Thus, this theory is suited to best explain the role of the independent variables (technology infrastructure, Service quality, personalization of services and customer orientation) on the dependent variable Customer loyalty.

Social Exchange Theory (SET)

The proponents of the social exchange theory are Thibaut and Kelley (1959). This theory also seeks to explain what motivates actors to behave as they do. The Social Exchange Theory views interpersonal interactions from a cost-benefit perspective, much akin to an economic exchange except that a social exchange deals with the exchange of intangible social costs and benefits (respect, honour, friendship, and caring) and is not governed by explicit rules or agreements. Like economic exchange, social exchange assumes that individuals take part in an exchange only when they expect rewards from it to justify the costs of taking part in it (Bailey, 2008).

King and Burgess (2008) describe a quasi-experiment whereby they contrasted the outcomes of two CRM implementation projects. In one project, the CRM project organization reacted rapidly and constructively to users' request for bug fixes and software changes, in the other project the response was slower and less helpful. Their hypothesis was that this perceived responsiveness would lead to increased cooperative intentions on the part of the users which, in turn, would increase software configuration correctness leading to greater user approval of the CRM system. The experiment results supported this hypothesis – namely that the social exchanges between the users and the project team were more positive, from a user perspective, in the first project – the project team were seen to care more for their users and to be providing them with a better-customised solution than in the second project.

Underlying all social exchanges is a degree of exposure: often one party is more vulnerable than the other, sometimes both are equally vulnerable. Top management may feel vulnerable in their dealings with vendor sales staff. Management is unlikely to be familiar with the software or to have used it before. They may not comprehend fully the degree of organizational change implicit in the adoption of the new system. Similarly, the project champions, key figures in the communication of the CRM strategy, will be asking of top management: what are the explicit and implicit rewards being promised for our commitment to this (time consuming) role? And, as King and Burgess (2008) showed, the departmental users will be having social exchanges with the project organization and asking: how responsive are they? Do they really understand our concerns? Do they fulfill their promises to us? Whilst formal contracts can be drawn up to address some of these concerns, the sheer complexity of social relations surrounding an organizational innovation as large and as complex as a new CRM system means that all stakeholders are likely to be exposed at times to unsatisfactory social exchanges and to deficits in social capital.

The importance of the theory to the study emanates from the fact that, the theory implies that human interaction is a purely rational process that arises and leads to economic success where both the client and the business benefit. The theory favours openness as it was developed in the 1970s when ideas of freedom and openness were preferred. The theory assumes that the ultimate goal of a relationship is intimacy. The variable customer orientation is based on this theory because the theory is clearly based on intimacy on social cost benefit of each customer.

Methodology

Survey research design was adopted for this study by reason of the descriptive nature of the study. The survey research basically used questionnaires to systematically collect data for a given identified population or sample with a view to assessing their perceptions, thoughts, opinions and feelings through their responses. The population for this study comprised all 2,587,287 customers of the four (4) major telecommunication companies in FCT Abuja according to NCC (2021). The population of telecoms subscribers in Abuja for the study (2,587,287) is distributed among MTN, Airtel, Glo and 9mobile as follows according to their market share as provided by NCC (2021):

Table 3.1 Telecommunication Companies Customer Size

Telecommunication Company	No of Active Subscribers	Market share (%)
MTN	1,009,042	38
AIRTEL	672,695	25
GLO	672,695	24
9MOBILE	232,856	13
TOTAL	2,587,287	100

Source: NCC (2021)

The sample size for the study was ascertained using the following formula proposed by Taro Yamane for statistically attaining sample size from a given population (Yamane, 1973), which is 2,587,287 for this study. Calculations are made at 5% significance level as follows:

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

Where:

n = Sample size

N = Population size (2,587,287)

e = Significance level (5% or 0.05)

Therefore,

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

$$n = \frac{2,587,287}{1 + 2,587,287(0.05)^2}$$

$$n = \frac{2,587,287}{1 + 2,587,287(0.0025)}$$

$$n = \frac{2,587,287}{1 + 6468.218}$$

$$n = \frac{2,587,287}{6469.218}$$

$$n = 399.94$$

The sample size adopted for this study was therefore, 400 customers of 4 telecommunication firms in Abuja distributed as follows among the telecommunication firms:

Telecommunication Company	No of Active Subscribers	Market share (%)	Sample
MTN	1,009,042	38	152
AIRTEL	672,695	25	100
GLO	672,695	24	96
9MOBILE	232,856	13	52
TOTAL	2,587,287	100	400

Source: Author's Compilation (2021)

The minimum of 400 respondents will then be selected purposively based on certain criteria in line with the purpose of the study. The criteria include the following: i) being customers of at least one of the telecommunication companies for a minimum of one year; ii) availability to take online survey, iii) knowledge of customer relationship practices of the telecommunication companies

Primary data was used for the study and obtained from the use of a structured five-point Likert scale questionnaire to collect the survey data in order to investigate the effect of customer relationship management on customers' satisfaction in the telecommunication industry in Nigeria. With reference to the reviewed literature, the questionnaire was adapted and modified from already established scales of Reinartz, Kraft and Hoyer, (2004); Liu and Wu, (2007) that all had acceptable levels of internal consistency. Using STATA software, the data was subjected to regression analysis after descriptive and correlation tests to ascertain absence of outliers and multicollinearity problems respectively. Ordinal method of linear regression analysis was used to establish the nature and the magnitude of the relationship between the dependent and the independent variables and to test the hypothesized relationships from the ordinal Likert scale data type collected from the study.

The mathematical presentation of the variables is given as; customer satisfaction is a function of customer relationship management

$$\text{CURET} = \beta_0 + \beta_1 \text{CRM} + \varepsilon \quad - \quad - \quad - \quad - \quad - \quad - \quad - \quad i$$

$$\text{CULOY} = \beta_0 + \beta_1 \text{CRM} + \varepsilon \quad - \quad - \quad - \quad - \quad - \quad - \quad - \quad ii$$

Where:

CURET = Customer Retention (Dependent Variable)

CULOY = Customer Loyalty (Dependent Variable)

CRM = Customer Relationship Management (Independent Variable)

AD = Age Diversity

β_0 = Constant/Intercepts

β_1 = Regression Coefficient of the Dependent Variable

ε = Margin of error

i = Cross sectional data type

Findings

Descriptive Statistics

Table 3: Descriptive Statistics for the Variables

Stats	CRM	CURET	CULOY
Mean	3.22	3.29	2.22
p50	3	4	4
Min	1	1	1
Max	5	5	5
SD	1.03	1.07	1.02
N	400	400	400

Source: Researcher's Computation, 2021

Table 3 shows the descriptive statistics for all the variables used in this study. The mean and median value for Customer relationship management (CRM) is 3 and it indicates that the respondents on an average were undecided. The minimum and maximum value were 1 and 5 respectively. These values do not show presence of outliers as there is no much difference between the maximum and the minimum values. The standard deviation was found to be approximately 1 from the mean value.

For customer retention (CURET), the mean and median is approximately 3 and 4 respectively and the minimum and maximum values of 1 and 5 respectively. The standard deviation was found to be 1.07. For customer loyalty (CULOY), the mean and median is approximately 2 and 4 respectively and the minimum and maximum values of 1 and 5 respectively. The standard deviation was found to be 1.02.

Correlation Matrix

Table 4: Correlation Analysis

	CRM	CURET	CULOY
CRM	1		
CURET	0.1911	1	
CULOY	0.3307	0.4417	1

Source: Researcher's Computation, 2021

Correlation table 4 above shows a positive relationship between Customer relationship management (CRM) and customer retention (CURET) with a coefficient of 0.1911; Customer relationship management (CRM) and customer loyalty (CULOY) with 0.3307; customer retention (CURET) and customer loyalty (CULOY) with 0.4417; They all exhibit positive relationships.

The correlation results indicate that there is no likelihood of multicollinearity problem associated with the data of the study as none of the correlation coefficients between the variables displayed any high relationship close to 1, meaning that all the variables are not related.

Regression Results

The statistical decision rule of p- value states that the Null hypothesis should be maintained if p-value is greater than alpha value (i.e., level of significance which is 0.05) otherwise it should be rejected while the Alternative hypothesis is adopted.

Ho₁ CRM has no significant effect on customer retention in the Nigerian telecoms market.

Table 5: Extract of Regression Result for Ho₁

Dependent Variable	Independent Variable	Coef. (β)	T	P-value (Sig.)	F-Stat	F-Stats P-value	R-Square
CURET	CRM	0.091	1.997	0.001	31.215	0.004	0.368

Source: Researcher's Computation, 2021

Table 5 shows that the regression model is fit to be used for the study as the F-stats is 31.215 with a p-value of 0.001. The table also indicated the R-square which is used to determine the variability in the dependent variable (customer retention) that can be accounted for by a change in the independent variable. The R-square value of 0.368 (36.8%) implies that the variability changes in customer retention for telecoms in Abuja that can be accounted for by the independent variable (CRM) is approximately 36.8%.

From table 5, it can also be observed that the regression coefficient for customer retention is 0.091 with p-value of 0.001 which is less than alpha value (0.05) therefore, the null hypothesis is rejected. This means that customer relationship management has a positive and significant effect on customer retention in the telecoms market in Abuja. This means that usage of CRM practices has led to better customer retention in the telecoms market.

Ho₂ CRM has no significant effect on customer loyalty in the Nigerian telecoms market.

Table 6: Extract of Regression Result for Ho₂

Dependent Variable	Independent Variable	Coef. (β)	T	P-value (Sig.)	F-Stat	F-Stats P-value	R-Square
CULOY	CRM	0.108	1.136	0.233	81.331	0.131	0.464

Source: Researcher's Computation, 2021

Table 6 shows that the regression model is fit to be used for the study as the F-stats is 81.331 with a p-value of 0.131. The table also shows the R-square value of 0.464 (46.4%) which implies that the variability changes in customer loyalty in the telecoms market that can be accounted for by the independent variable (CRM) is approximately 46.4% while the remaining can be accounted for by other variables not captured in the model.

It can be further observed from Table 6 that the regression coefficient for customer loyalty is 0.108 with a p-value of 0.233 which is greater than the alpha value (0.05) therefore, there is no sufficient statistical evidence to reject the null hypothesis. The study therefore fails to reject the null hypothesis which states that customer loyalty is not significantly affected by Customer relationship management. This means that Customer relationship management indeed has no significant effect on customer loyalty of the telecoms market in Abuja, Nigeria. This also means that the CRM practices in the industry have not led to consequentially better loyalty level from the customers.

Conclusions and Recommendations

From the above findings, the study concludes that customer relationship management has been okay in terms of how it generates favorable retention rate of customers, but it has not been effective in actually turning the retained customers of the telecommunications market in Abuja, Nigeria into loyal customers. This could mean that the CRM practices are not being done properly or optimally in ways that achieve the full objectives set out.

The study therefore recommends in line with the findings and conclusions above that:

- i. the telecommunications companies in Nigeria as assessed by this study should continue with the CRM practices that are targeted towards achieving good customer retention for the telecoms market products and services since the effect was seen to be positive and significant.
- ii. however, the CRM practices of the firms that are targeted at achieving optimal customer loyalty on the other hand would need to be greatly improved so that the positive effect that is presently seen can become significant or in other words, become of consequence to loyalty of the telecoms market' customers.

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