

**Technology acceptance and users' satisfactions with
telecommunication services**

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Abstract

Technological innovation and advancement have augmented the space of productivity in terms of quality and quantity, goods and services delivery and the removal of overall stress embedded in jobs. This achievement also comes with the challenge of technology acceptance as well as user satisfaction with the technology, especially in the telecommunication industry in Nigeria. Hence, the objectives of this research are to determine the extent of users' satisfaction in the telecommunication industry and examine the technology acceptance of telecommunication products. Two thousand participants were selected for the study in the Ibadan metropolis and Pearson Product Moment Correlation (PPMC) was used in analysing the information gathered from respondents. The result of the analysis ($r = .713$, $n = 2000$, $P (.003) < 0.05$) revealed that participants considered factors such as availability of the network, network coverage, quality of service and call rate before choosing a network provider or telecommunication brand in the studied area. It was concluded in this study that participants considered factors such as availability of service, novelty technology, service availability, call rate and data rate before choosing a brand of telecommunication service in the study area. The research showed that service availability, call rate and data rate are factors considered by customers before choosing a brand of telecommunication service. The research also revealed that telecommunication service is an accepted technology in the studied area with some inherent challenges. Going by the outcomes of this study, it can be concluded that there is a correlation between the users' satisfaction and technological acceptance in telecommunication industries in Nigeria. It is therefore recommended that telecommunication providers should enhance the quality of service and minimize the call rate, especially on phone calls and short message services (SMS) in order to satisfy their customers and win more patronage.

Subject Classification: 68Uxx, 94Dxx.

Keywords: Technology, Technology acceptance model (TAM), Telecommunication services, User's satisfaction, Telecommunication services.

1. Introduction

Technological innovation and advancements have augmented the space of productivity in terms of quality and quantity, good delivery of services and removal of overall stress embedded in jobs. It has also created an avenue for innovations in the global market wherever there is internet service. Adesina et. al., (2022) [1] noted that there have been technological developments for a few years now and it has impacted positively on individuals and organizations in several ways. Technology was described as a powerful and precious tool that supports growth, drives development, enhances competitiveness and promotes innovations. It enables the utilization of devices or software to improve job effectiveness and efficiency. The importance of technology in human existence cannot be undervalued, as knowledge of technological advancements increases every day, the importance of technology makes it relevant and popular in business, hospitals and many more [2]. The acceptance of technology

could be linked to various factors ascribed to users like education, training and persistent use, many studies including [3] considered Technology Acceptance Model (TAM) as a model that describes the decision of a user to accept new technologies and the factors that influence the user's decisions to accept or use such technology. It was further explained by [4] that computer behaviour has gained high acceptability and has been validated by many empirical studies as an accurate predictor of system acceptance and usage.

User satisfaction was also considered a concept that influences continuous patronage and increases the loyalty of the users positively [5, 6]. The causal relationships between the actual use of cell phone and user satisfaction were used to describe user satisfaction in telecommunication industries according to Connor & Reilly [7], the viewed business environment is a dynamic one and witnessing rapid changes due to innovations and new technology introduced that are meeting the demand of ever-increasing users. The advent of Information and Communication Technology (ICT) brought about 3G, 4G and recently 5G services by the telecommunication industry was a welcome development for many users. Hew (2017) [8] recently performed a bibliometric analysis and the results showed improved interest in the scientific world in the telecommunication products and services and suggested future studies in the telecommunication industry which include users' satisfaction.

Mobile phone service was introduced in Nigeria in 1992, through the combined efforts of Nigeria Telecommunication (NITEL) and DSL of Canada to produce Mobile Telecommunications Service (MTS). Telecommunication in Nigeria became competitive when the sector was deregulated and private individuals were given opportunities to operate the business in 2001. Telecommunication systems were opened with the issuance of the Global System for Mobile (GSM) unified license [9]. NITEL was the only operator in the telecommunication market in Nigeria before 2001 with about 500,000 subscribers from a population of about 140million. The regulatory body, the Nigerian Communications Commission, expanded the mobile telecommunication frontiers by granting GSM licenses to another three (3) service providers, namely: MTN Nigeria, ECONET presently called Airtel, as well as MTS which was later privatized to MTEL [9]. GLOBACOM, the second national carrier and ETISALAT were given operational licenses in 2002 and 2007 respectively, and this made the number of GSM users/subscribers in Nigeria increase greatly [10]

Nigeria, like the rest of the world, benefited from the services that the telecommunication industries are rendering, either by using the

telecommunication services for advertisement, enhancing collaborations, premier customer service, increasing flexibility and improving communication. Therefore, User satisfaction is fundamental in all products and services of this industry, it is important to consider user satisfaction for the purpose of improving the services for the users and business patronage through innovations. The quality of telecommunication service (mobile phone) to the users determines the user's satisfaction, and this was studied by various scholars including Olatokun and Nwonne, (2012) [11] but the aspect of technological acceptance with respect to user satisfaction was not considered.

Since no study has investigated user satisfaction and technology acceptance in the telecommunication industry in Nigeria for the purpose of identifying the areas of strength and weakness which are very important to the growth of the telecommunication industries in Nigeria. Also, based on the need for the development of telecommunication technology primarily in Nigeria, this identified gap is required to fill in the study. Hence, this research undersees the user's satisfaction and technology acceptance with the telecommunication services in Nigeria in a bid to identify the area where the telecommunication industry is lacking behind and recommend improvement in such areas. The objectives of the research paper are as follows:

- i. To examine the level of technology acceptance of telecommunication services by the users.
- ii. And, to determine the extent of users' satisfaction with telecommunication service in the area of calls service and short message services.

Organization of the Paper

The remaining part of the paper is organized as: Section 2 presents the literature review of related works, Section 3 presents the methodology adopted in the study, Section 4 highlights the results of the study and its analysis and section 5 concludes the paper with future scope.

2. Literature Review

From its inception till now, the Nigerian telecommunication industry has enjoyed rapid and persistent growth and development. Considering the ever-increasing number of subscribers annually and new products by the telecom providers, these have made Nigeria the fastest growing

telecoms market in Sub-Sahara Africa. Oyeniran and Onikosi-Alliyu, (2016) [12] also affirmed that the telecommunications industry has been lucrative since 1990 and has become an important industry in the development of the Nigeria economy. It also points to the fact that marketing strategies that have emanated from telecommunication industries should also be accepted by users because the user of a particular network provider would like to keep a long-term link with their provider for greater and more efficient communications [13]. Hence, service providers need to work effectively and efficiently to enhance their service delivery mechanisms so as to keep their customers satisfactorily. A study that aimed at identifying the factors influencing the continuous intention to use telecommunications shopping websites and apps conducted using structural equation modelling was used to analyse 518 user data collected from Turkey shopping clubs. The results showed the perceived usefulness variable, enjoyment and satisfaction significantly affected the users' continuous patronage in using mobile services [14].

The telecommunication industry in Nigeria is one of the most flourishing sectors. The sector has enormously contributed to growth and development in Nigeria by creating jobs for the teeming youths and rendering services to individual and corporate bodies. The Nigerian telecommunication industry has been characterised by traditional ways of rendering services to users. The integration of modern technology in the telecommunication industry may induce user satisfaction and user decision to adopt any newly introduced service, which will further augment growth and development in the sector and the country at large. Although, there is inadequate research work on user satisfaction and technology acceptance in the telecommunication industry and few studies done pertaining to user satisfaction and technology acceptance have been carried out in the banking, governance and educational sectors. For instance, André (2016) [15] examined the factors that determine the satisfaction and acceptance of related technology, such as the Web service. The study was conducted to gain more insight into satisfaction and acceptance of Web services within a financial organization in the Netherlands. Sharma, et al, (2014) [16] also investigated the technology acceptance perspective on user satisfaction and trust in e-government adoption.

In recent research by Alhumsi & Alshaye (2021) [17], the perceptions of students toward the use of Blackboard Collaborate on academic writing in English as a Foreign Language was studied. A survey was conducted using online technology to 248 people responded. The quantitative study used the TAM theory to assess the acceptance of a Learning Management

System at Saudi Electronic University in Saudi Arabia. The results revealed that all of the constructs were relatively strong and had positive relationships; they were correlated with one another, and the entire set of six hypotheses was supported. The proposed model in the paper showed that Attitude toward use was the most powerful predictor of Behaviour Intention. The research raised questions that needed to be investigated further in the using TAM for similar studies in the technological environment [17].

In 2001, Shannon, (2001) [18] studies the benefit of computer-mediated communication (CMC) technology in the classroom, looking at it from the lecturers' point of view. The study focused on the available technologies on campus which include telecommunication. It was discovered that there were significant contributions of these technologies to the educational advancement acknowledged by the lecturers, but some lecturers were not satisfied due to perceived limited pieces of equipment and knowledge about the available technologies. Hence, most of the lecturers were not ready to use the available technologies [18].

Due to the importance of telecommunication services to the users, Goyal & Kar (2019) [19] carried out a study aimed at identifying basic factors that were responsible for customer satisfaction with telecommunication services. the study considered 4 lakhs, tweets collected from Twitter by using popular hashtags and @ mentioned for telecommunication industries in India. A positive relationship between independent variables (network Quality, Service interaction Quality, and Customer Support) and dependent variables (customer satisfaction) outcome was achieved in the study [19].

Khan, et. al., (2018) [20] conducted a survey aimed at identifying and highlighting major attributes that affect customer satisfaction which would be of help the telecommunication industries' service and management improvement. The study eventually examined resilient or fragile factors that influenced customer satisfaction. According to recent research, six attributes were considered and tested in the research to determine customer satisfaction: network coverage, voice call quality, drop call rate, SMS delivery, internet service, and call setup duration. In the study, 200 people were chosen from Islamabad, Pakistan. To rate each of the factors and their overall satisfaction, a telephonic survey was conducted. According to the findings, network coverage, voice call quality, and internet service have the greatest impact on customer satisfaction.

Kumar, et. al., (2021) [21] aimed to study the degree of customer satisfaction in the telecommunication services in Bangladesh and its

significant factors such as organizational efficiency in their paper, organizational competency, service- quality and product price. The study utilized both primary and secondary data, the primary data were randomly sampled from 400 respondents. Statistical Package for Social Science (SPSS) and Smart PLS 3.2.3 technique was used for data analyses. According to the findings, old age and illiteracy have no feelings or thoughts about service offerings, prices, or internet capabilities. They want a strong network and plenty of talk time. However, educated people and young people were very concerned about talk time, network, service quality, internet access, and product offers, among other things. The study also found that the organization's organizational competency and efficiency have no bearing on customer satisfaction. The study also discovered that product price and service quality have a significant impact on customer satisfaction in Bangladesh's telecommunications industry [21].

2.1 *Theories of Technological Acceptance*

Momani & Mamoun (2017) [22] noted that some famous and important used the following reviewed theories of technological acceptance: Theory of Reasoned Action, which was expanded to Theory of Planned Behavior. Technology Acceptance Model (TAM), information systems had equally contributed by expanding TRA; that also has led to TAM2. Other theories innovation diffusion theory and social cognitive theory were developed and useful in several social and scientific fields. The study considered three of these theories that are relevant, they are social cognitive theory, theory of reasoned action and TAM. Momani & Mamoun [22] also argued that all technology acceptance theories are designed to evaluate the level of acceptance and satisfaction of the users with any information or technology system.

2.2 *Concept of Technology Acceptance*

Many factors determine the acceptance of newly introduced technology in the telecommunication industry. Technology Acceptance Model is denoted as a way in which users and designers of new technology can evaluate factors that determine the adoption and uses of new technology [23, 24]. TAM was considered as the usefulness and ease of use as a major factor toward acceptance of technologies. Akman (2015) [25] carried out a study to measure user satisfaction with government departmental offline and online services and to determine factors that affect e-governance services acceptance. The findings revealed that

many support the idea of reliable manual services that have significantly enhanced while the willingness of businesses to use e-services instead of using manual services information channels was noted.

The concept of TAM also involves perceived usefulness and perceived ease of use. The perceived usefulness is about enhancement and increasing the peoples' beliefs towards the adoption of information technology or system. This implies that it is essential for introduced technology to be responsive, ease to access and simple to perform. Akman [25] argued that information should be presented and structured according to the needs of the user. Vogels, et. al., [26] observed that customers are more willing to apply technology if its uses are according to the way the users intend to interact with others. This found a strong positive effect on users' overall satisfaction with the intention to adopt internet technology. Perceived ease of use describes to what extent a user believes that using a particular system or technology would be effort-free. This definition emphasises that technology could be adopted when prospective users find it useful with less effort. In other words, perceived ease of use denotes a person's perception that using a particular technology or system is less complicated [27, 28]. Similarly, this claim was buttressed in the study of the perception of ease of use and taxpayer satisfaction in e-filing context [29].

Ghotbabadi, et. al., [30] studied the significant and positive relationship between users satisfaction and perceived ease of use was found to be a contributory factor to the growth of the industry, it also attested to the fact that ease to technology helps the user, regardless of its experience or training in finding the necessary information within a reasonable time. Technology acceptance of mobile in the banking industry in South-East Nigeria was also studied by [31]. The technology that came with many solutions including mobile money, was studied to identify the underlying factors which influence the acceptance of this technology by Nigerians. The research used TAM to construct the following applicability such as perceived ease of use (PEU), amount of information about mobile money (AIMCs), the perceived financial cost (PFC), and perceived expressiveness (PE). 314 data were collected and analysed with a partial least square structural equation modelling technique. The result showed that 0.7365 PEU, 0.7742 PFC, and 0.7463 AIMC imply that PEU, PFC and AIMC are important factors that influence the acceptance of mobile money services in Nigeria [31].

2.3 Telecommunication Service

Telecommunication industries render many services that influence users' satisfaction and lead to their acceptance. These services include but are not limited to the mobile phone that is popularly used for short message services, multimedia services, and phone calls. It is useful in security, smart solution, management, marketing and other facets of human endeavor [32, 33]. Recently, telecommunication technology has advanced to 4th and 5th generation and this is referring to 4G and 5G. The mobile internet speed is faster by about 500 times 4G than the popular 3G technology, and 5G technology is about 100 times faster than 4G technology. These telecommunication technologies are providing a paradigm shift, especially in the area of internet services thereby helping users to solve many problems in their daily and business [34].

2.4 User's Satisfaction in Telecommunication Industry

Satisfaction describes the extent of affective or cognitive evaluation in using and purchasing a product or service. In other words when the users' expectations are met then they feel satisfied, it is posted usage feelings. This can lead to perpetual usage and purchase of the same product or service [35]. User satisfaction can also refer to the post-consumption judgement and reaction concerning a specific product or service. The study opined that the higher the perceived values of users, the more satisfied they are with the particular service provider. Users who perceive that using a system was effortless would positively affect their perceived enjoyment. The increased adoption of SNSs is drawing much attention from industrial and academic researchers to explore users' behavior in SNSs, and the advent of SNSs which initially increased has witnessed a drastic reduction in patronage, due to human interaction and time spent on the system [36].

Kim, et. al., (2016) [37] in their work defined satisfaction as the level of cognitive or affective evaluation in selling and using a products or services. In other words, when users' expectations are met, users of a product or services feel satisfied but feel unsatisfied if they are not met. According to Izogo (2017) [38], satisfaction was seen as a cognitive process that encompasses both the expectation that customers would be satisfied after using a product and the product's actual level of effectiveness. Users' satisfaction with respect to telecommunication service can be impacted by the satisfaction level subscribers have with the billing system, network quality and customer care services [39].

Table 1
Related Works on Technology Acceptance and Users' Satisfaction

Author (Year)	Study Area	Methods of analysis	Results	Inference
Kalayou, et. al.,(2021) [3]	Electronic health	Structural equation modelling	Perceived ease of use and user satisfaction has an effect on electronic health	The study was carried out in the health sector but its technology acceptance was not considered
Mahmudah and Kartikaningdyah, (2020) [5]	Telecommunication industry	Simple linear regression analysis	Perceptions of usefulness and convenience perceptions have effects on e-filing but user satisfaction has no effect	Although, the study was carried out in the telecommunication industry but it was mainly on e-filing and technology acceptance was not considered
Koranteng, et. al., (2019) [36]	Higher Education Institutions	Statistical Path Coefficients of Inner Model.	Users' satisfaction has an effect on social network sites (SNS)	The study was not conducted in the telecommunication industry and the technology acceptance of SNS was not considered
Skoumpopoulou, et. al., (2018) [43]	Higher Education Institutions	Chi-squared test	Behavioral intention has an effect on the technology acceptance of the user (staffs)	Information Technology of the institutions was used but not basic telecommunication services way not considered
Ezeh and Nwankwo (2017) [31]	Banking industry	Partial least square structural equation modelling	perceived ease of use, price and Amount of information on mobile money has an effect on the technology acceptance	The research was not carried out in the telecommunication industry and user satisfaction was partly considered

Contid...

Ghotbabadi, et. al., (2016) [30]	Airline	Modeling of structural equations	Quality of service relationship marketing, and with users' satisfaction (customers' perceived risk) have effects on Airline Services and the industry	the study carried out the used quality of service and users' satisfaction in Airline Industry, but the telecommunication industry and Technology acceptance were not considered in the study.
Lierop and El- Geneidy, (2016) [40]	Transport industry	Modeling of structural equations	Loyalty, relationship marketing, and with users' satisfaction (customers' perceived risk) have effects on Airline Services and the industry	the study carried out used loyalty and users' satisfaction in the transportation industry, but the telecommunication industry and Technology acceptance were not considered in the study.
Rahman (2014) [44]	Telecommunication industry	multiple regression analysis	service innovativeness, service reliability, price, network coverage and service competitiveness has a significant effect on customer satisfied	Although, the study was conducted in the telecommunication industry but technology acceptance was not considered

Telecommunication in Nigeria offers varieties of telecommunications products and services that are patronized by different users based on their tastes, expectations and needs as user satisfaction is important in the business world today. Lierop and El-Geneidy (2016) [40] argued that the users' satisfaction is important for a service provider to maintain a strong relationship and increase the uses' patronage, although, the research was in the area of public transportation. User satisfaction makes the cell phone users loyal to a network service provider and this in turn helps the profitability of the provider as well as building the brands and maintaining relationships with the users [41]. Although it is costly to develop products and services that will satisfy users and bring about loyalty, but user satisfaction remains the vital key to the users' loyalty. Son et al, (2018) [42] described users' satisfaction as an emotional state that results from a user's interactions with a product, the study noted the following as the factors that influence user satisfaction; overall user satisfaction, price and service encounter satisfaction. Table 1 shows the review of related works on Technology Acceptance and users' satisfaction with telecommunication products and services in Nigeria.

It is evident that the technological advancement brought by telecommunication services and ICT, the duo have contributed to the economic and social well-being of users in no small measure. This brings about technological expansion and acceptance of telecommunication products and services in the telecommunication industry. The empirical review of pieces of the literature showed that no study has considered investigating the extent of users' satisfaction and technology acceptance in the telecommunication industry in Nigeria to the best of researchers' knowledge. Although, related studies have been carried out in other fields across the world, hence, the need for the identified gap to be filled, and improve the telecommunication sector in Nigeria so that it can continue to be a flourishing sector, which is contributing to growth and development in Nigeria and Ibadan metropolises in particular. Hence, the study area is suitable for the study.

This research aimed at considering user's satisfaction and technological acceptance in the telecommunication industry. Specifically, the objectives to actualise these findings are to:

- i. examines the level of technology acceptance of telecommunication services by the users and;
- ii. determine the extent of users' satisfaction with telecommunication services in the area of calls service and short message services.

The study is anchored by the three research questions:

- i. To what extent is the user satisfied with the telecommunication service in terms of call services and short message services?
- ii. Is there any effect of network quality on user satisfaction?
- iii. Is there any significant association between user satisfaction and TAM?

3. Methodology

This section described the methodology applied in the study. The proposed methodology is depicted in the users' satisfaction and technology acceptance model as shown in Figure 1

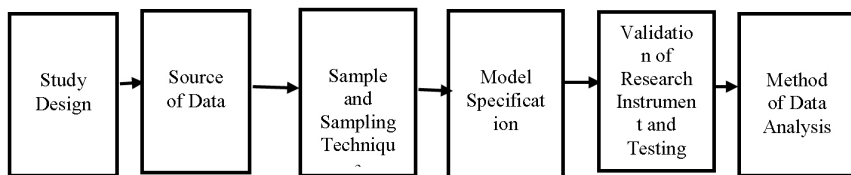


Figure 1

Block diagram of technology acceptance and users satisfaction with telecommunication service.

3.1 Study Design

This study uses a “expost facto” descriptive survey design, which is a research method in which groups with qualities that already exist are compared on a dependent variable. The method is the suitable for this type of study because it seeks to establish the influence of the dependent variable (Users Satisfaction) on the independent variable (Technological Acceptance) with telecommunication services. The emphasis was on phone calls and short message services (SMS), the research data were analysed using Pearson Product Moment Correlation (PPMC) data analysis tool for more objectivity

3.2 Data Collection

The findings of this study were implemented using primary data. The primary data was gathered using a self-designed questionnaire to elicit information about the research's tested variables. These variables

include the dependent variable (User's Satisfaction) and the independent variable (Technological Acceptance) with the telecommunication service.

3.3 *Sample Technique*

The sample of this research comprises two thousand (2000) users of telecommunication services (majorly phone calls and short message service) in Ibadan, Nigeria. Purposive sampling techniques were used to select four local government areas in Ibadan Metropolis and this was done because only MTN and Globacom users were judged to be the most populous in the area. Thereafter, simple random sampling techniques were used to select fifty (500) respondents from the initial selected four (4) Local Government Areas.

3.4 *Specification of the Model*

The model for this research was in line with the variables in this research and it is illustrated with the mathematical expression stated in equation 1.

$$US = \alpha + \beta_1 TAM + \mu \dots \quad (1)$$

Where α = Constant of the equation

β = Coefficient of variable explanatory

US – User's Satisfaction

TAM – Technology Acceptance Model

μ – Error Term

Dependent Variable

Independent variables

Independent variables

3.5 *Validation of Research Instrument and Testing*

The questionnaire validation was done after subjecting validation instruments to authorities in the field of data analysis, criticism from colleagues in computer science and other experts in statistics and mathematics. The questionnaire reliability was developed for data collection and was established using the statistical procedure. This procedure involved the use of testing principles such as estimation methods; whereby the questionnaires were given to the sub-sample of the population under the research area within a timeframe of one week.

3.6 *Method of Data Analysis*

Descriptive statistics (frequencies and percentages) and Pearson Product Moment Correlation (PPMC) were used to analyse the data

gathered. The data analysis approach is one the suitable approaches for similar study according to [45-46].

4. Results and Analysis

The results obtained from mobile network users in the Ibadan metropolis are presented and discussed in this session. The PPMC statistical tools were used for the data analysis in this research.

4.1 Research questions (RQ)

i. **RQ 1: To what extent have users been satisfied with the telecommunication services?**

Figure 2a-d revealed participants' responses on the extent to which users were satisfied with the telecommunication services in respect of phone calls and short message services (SMS) only. It was indicated in Figure 2a that 1300 (65%) of the participants were satisfied with the services provided by the new technology, and telecommunication; 510 (25.5%) were dissatisfied and 190 (9.5%) were indecision. Figure 3b is the response of the participants who found the novel technology interesting to use where 1060 (53%) were satisfied, 510 (25.5%) dissatisfied, and 430 (21%) indecision. Figure 2c is the response of the participants who saw the telecommunication service technology as a good way to promote their business where 1430 (71%) were satisfied, 340 (17%) were dissatisfied and 230 (11.5%) indecision. Lastly, Figure 2d is the response of the participants that saw telecommunication service as a way of keeping in touch with family in good time, where 1020 (51%) were satisfied, 540 (27%) dissatisfied and 440 (22%) were indifferent with the users' satisfaction in respect of getting in touch with the family, indecision in this research includes where respondents choose to be silent and the questionnaires that were not returned. The graphical representation of these is shown in Figure 2a-d.

ii. **RQ 2: Is there any effect of network quality on user's satisfaction?**

A higher percentage of the respondents agreed that the effect of network quality on user's satisfaction is influenced by network availability with 1660 (83%), the respondents that disagreed were the next with 200 (10%) while 140 (7%) were indecision (Figure 3a). The network coverage has there following respondents 1300 (70%)

agreed, 370 (13.5%) disagreed and 330 (16.5%) Indecision (Figure 3b). The quality of service has the following respondents 1340 (67%) agreed, 360 (18%) disagreed and 300 (15%) indecision (Figure 3c). The response on-call rate was 1390 (69.5% agreed, 390 (19.5%) disagreed, and 220 (11%) indecision (Figure 3d), indecision in this research includes where respondents choose to be silent and the questionnaires that were not returned. The graphical representation of these are shown in Figure 3a-d, and it implies that the technology in telecommunication service is accepted by the respondents, and the acceptability can be improved as respondent that disagreed were next in the percentage to the respondents that agreed while indecision was the lowest in all the statements raised. The response also implies that the participants considered factors such as availability of service, network coverage, and quality of service before choosing a brand of telecommunication products in the study area.

iii. RQ3: Is there any significant association between user's satisfaction and TAM?

The results in Table 2 shows that the relationship between technological acceptance and users satisfaction is significant ($r = .713$, $n = 2000$, $P (.003) < 0.05$). Hence, it could be deduced that technology acceptance positively influenced the user's satisfaction of respondents in the area of study i.e. an increase in the technology acceptance of respondents leads to an increase in user's satisfaction of respondents in the study.

Table 2
Pearson Product Moment Correlation (PPMC) showing the relationship between User's Satisfaction and Technology acceptance

Variables	Mean	Std. Dev.	n	r	P-value	Remark
User's Satisfaction	18.36	3.50	200	.713	.003	Sig.
Technological Acceptance	36.33	3.51				

Sig. at 0.05 level of significance

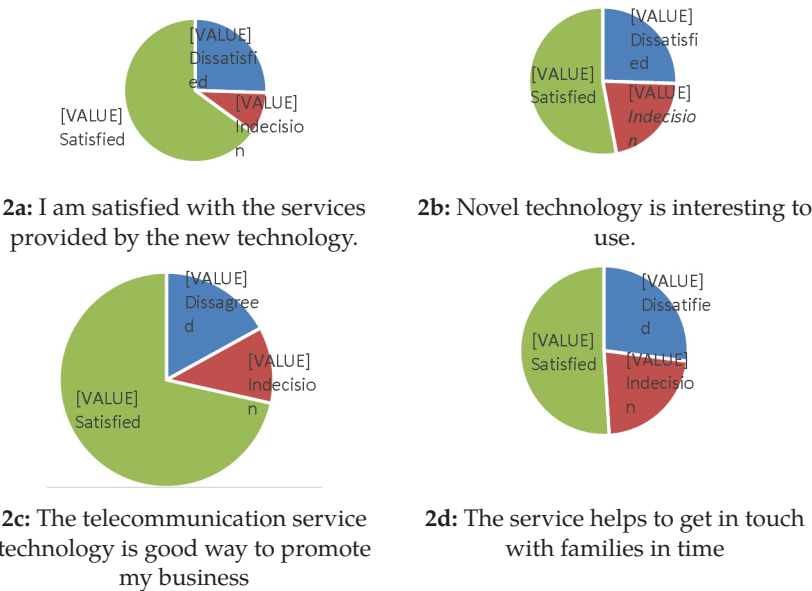
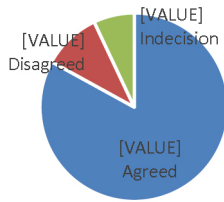


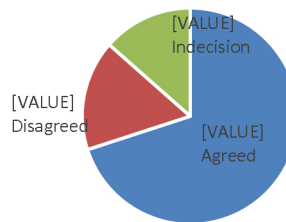
Figure 2 a-d
participant responses on the users' satisfaction with the telecommunication services

4.2 Analysis of Findings

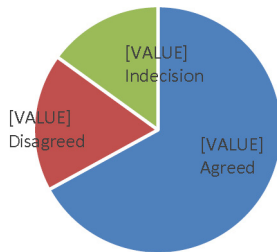
The analysis of the information collected from the field presented the extent to which technology acceptance and users satisfaction affect telecommunication service as revealed by participants' responses. Making deduction from the responses of the participants, technology acceptance and user's satisfaction have their effect on the telecommunication industry through their services. As shown in Table 2, the majority of the participants were satisfied with the service provided by the telecommunication industry and accepted the technology, this is similar to the finding of Lierop and El-Geneidy [40]. Furthermore, the study shows that there is an effect of network quality on user satisfaction (Figure 3a-d). Participants of this study considered factors such as availability of service, network coverage and quality of service before choosing a brand of network providers in the study area. This means that quality of service is a vital factor considered by users before engaging in a trend of transaction with telecommunication services, similar to the finding [41].



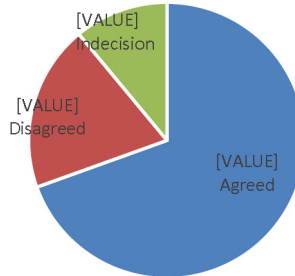
3a: My decision to use a product of any telecommunication industry is influenced by network availability



3b: I choose network provider because of its network coverage



3c: I choose network provider because of quality service



3d: I choose network provider because of call rate

Figure 3 a-d

Effect of network quality on user's satisfaction.

5. Conclusion and Future Scope

This study examined the user's satisfaction and technology acceptance in the telecommunication industry. To carry out the findings of the research, data was gathered from 2000 phone users who engage in a transaction with the telecommunication industry. The study design used descriptive analyses to analyzed statistical data gathered (frequency, mean, and PPMC). Three research questions were addressed, the results of the analysis of data obtained in the research with respect to research questions showed that; Deduction from the responses of the participants shows that both technology acceptance and users satisfaction in the telecommunication industries in Nigeria is influenced by services rendered by the network providers. It was indicated in this study that participants considered factors such as availability of service, quality of service, novelty technology, network coverage, service availability, call rate and data rate before choosing a brand of telecommunication service in

the study area. The research showed that service availability, call rate and data rate are factors considered by customers before choosing a brand of telecommunication service.

Technology acceptance especially in the area of telecommunication is significantly associated with user satisfaction. This study, therefore, recommends the following;

- i. Tariff/billing and customer care service should be improved.
- ii. The service providers should invest constantly in their facilities so as to prevent or minimize service breakdown/failure thereby improving the quality of their service and enhancing users' satisfaction;
- iii. Rather than bombarding their subscribers' phones with "chains" of "irrelevant" SMS, telecom service providers should find more effective ways to promote their products.
- iv. Power supply and use of Fiber optics to ensure power supply and improve the network quality at based stations respectively should be addressed

Research has no end. Thus, the future direction of this research is to carry out the investigation with more participants and locations in a bid to identify and undertake factors that will promote users satisfaction in telecommunication industries in Nigeria and beyond. The scope of the research is hoped to be widened such that more states in Nigeria and the more statistical tool will be used.

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