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## Electronic Payment System and Customer Satisfaction in Nigerian Banking System

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### Abstract

The study evaluates the level of customers' satisfaction in e-payment systems in Nigeria. The study will be conducted among bank customers in Awka city. The selected electronic payment systems were made to encompass Automated Teller Machines (ATMs) and Point of Sale (POS). The study made use of the survey research design. The sample of the study focuses on 70 bank customers of banks in Nnamdi Azikiwe University, Awka, Anambra state. The instrument for data collection was the questionnaire developed by the researcher. The data gathered were analyzed using the descriptive methods and the paired sample t-test method. The computations were done using the Statistical Package for Social Sciences (SPSS) version 22. The findings showed that customer's actual experience fell significantly short of expectation in all the e-payment systems, indicating that bank customers were not satisfied with any of the e-payment systems used in Awka. Based on the findings of the study, the researcher recommended among other things that; the monetary authorities should liaise with commercial banks and other stakeholders to strategically install ATM machines in strategic areas to ensure increased accessibility; and that banks should also continue to search for ways to improve the performance of the e-payment services by constantly seeking feedback from customers. There should be a downward review of the charges associated with the use of point of sales terminals so as to encourage increased use and ease the pressures associated with the accessibility of ATMs.

**Keywords:** E-payment, Automated Teller Machines, Point of Sale.

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### 1. Introduction

Banking industry has moved into an era of technology which is driven by sophisticated innovations in Information and Communication Technology (ICT). The industry shares the common attributes of high-technology industry, most notably: market uncertainty, technology uncertainty and competitive volatility. Electronic payment systems in the 21st century has become widespread and its effect inevitable. An outstanding development in the industry is the adaption of information and communication technologies (ICT) in providing banking goods and

services. These forms of services include products include automated teller machine (ATMs) transactions, point of sale (POS) system, mobile banking system and internet banking system (Ijeoma, Okpara, Akujor & Mbah, 2020).

Before the existence of electronic systems of payments, transaction of businesses in the financial and productive sectors had been a difficult and stressful one. Mostly, banks make use of ledgers, folio numbers, and postcards like data sheet where customers name, specimen signature, photo where kept in record. The manual operations caused very slow and inefficient performance of the banks in Nigeria. Technology has affected the performances of all Nigerian banks in the previous time. This century has been associated with the availability of dynamic customers whose interest is targeted on banking services, improved regulation, and high profitability.

The Electronic means of payment is a way of carrying out financial transactions with the use of mobile or internet in order to reduce the huge risk involve in carrying physical cash or paper cheque. Electronic banking guarantee speed, efficiency, fair and well secured transactions compared to that of cash-at-hand procedure (Jenevive & Anyanwaokoro, 2017). A number of means of Electronic Payment System abound thereby leaving customers' with the choice of whichever they prefer and the knowledge to Information Communication Technology (ICT) today allow customers to choose whichever platform they like. The ability of banks also to engage in proper maintenance culture gives room for customers' retention thereby providing a means of survival for small and medium scale entrepreneur. Nigeria used to be cash based economy with over 90% of funds residing outside the banking sector as against the developed world where the money in circulation is 40% and 9% in the United Kingdom and United States respectively.

Before the emergence of modern banking system, banking operation was manually done, and that solely account for the inefficiency in handling transactions. This manual system involves posting of transactions from one ledger to another without the aid of computer system. Computations which should be done through computer or electronic machines were done manually, which sometimes lead to miscalculations due to human errors, which results in extension of closing hours when account is not balanced on time. (Siyanbola, 2013).

Ever since the introduction of Electronic Payment System, studies have shown that it enhanced services delivery in the banking industry and brought a great development in the Nigerian Banking Industry. However, a lot of problems are associated with the introduction of this electronic payment system out of which the following falls: low internet penetration, money laundry, and high cost of maintenance of e-payment machines, improper customers' identification and account verification of online purchases, literacy and concerns on risks.

The performance of the Nigerian banking system depends on the confidence and satisfaction of bank customers on the products and services offered by the banks. Customer satisfaction anchors on the expectations and insight about the services offered. Electronic payment services have provided benefits for customer satisfaction in dealing with financial institutions with the number

of services rendered to their customers. Customers find it very easy and satisfactory in operating in modern banking these days because most of the activities done are at their own convenient which has ended the era of queue system in the banking hall.

Technology forms the backbone for better results in offering banking services. This is articulated in the Hong Kong and Shanghai Banking Corporation (HSBC) report of 2000, which stated that benefits from technology are more than three times its cost. Banking transactions need continuous innovation in order to meet the yearnings and aspirations of the ever-demanding customers. Hence, banks need to roll out new products and services quickly and effectively, using latest cutting edge technology (Augusto, 2002). The benefits banks derive from electronic payment products and services delivery is improved efficiency and effectiveness of their operations so that more transactions can be processed faster and most conveniently, which will undoubtedly impact significantly on the overall performance of the banks. The customers on the other hand, stand to enjoy the benefit of quick service delivery, reduced frequency of going to banks physically and reduced cash handling, which will give rise to higher volume of turnover.

However, these developments in the Nigerian banking industry seem not to have achieved their aims. Queues are still seen in the banking halls, bank customers still handle too much cash, and hardly people talk about the electronic banking products that are available in Nigeria. Pertinent questions include: how are these customers really enjoying the services? To what extent has customers' patronage for and reaction to a particular product depended on their level of understanding of what the product can do?

Customers have continued to complain about a lot of short comings of electronic payment systems. These short comings, as stated by the customers' include; machine out of order, machine out of cash, no printing statements, cards get blocked, frequent breakdown of Automated Teller Machines (ATM) service, unreliability of ATM service, lack of sufficient technicians in all bank who solve breakdown of ATM machine, lack of sufficient alternative system which substitute ATM service for the customer when temporary problem happen in the machine, lack of convenience of E-bank service, lack of mobile banking service, lack of reliable tele-banking, lack of credit card service, under-development of technological infrastructure, low level of relevant knowledge creation and innovation, interruption of network, lack of suitable and regulatory frame work for e-commerce, resistance to changes in technology among customers and service providers as result of fear of risk and many more. The ATMs are also saddled with consistent breakdowns and the internet services to easily access are difficult as far as the ordinary customer is concerned coupled with the rise in internet banking related fraud. All these have almost negated the introduction of the electronic payment services in general. It is therefore imperative to investigate whether the advent of electronic means of payments are really improving customers' satisfaction of banking services. These problems prompt the researcher to conduct an investigation on the satisfaction of customer in e-payment systems in the Nigerian banking system. The gap this study tends to fill is not only to compares experience and expectation from use; it also compares satisfaction derived from banking with and without the e-

payment services. This method is an improvement on previous methodology in that it eliminates bias associated with compelling, suggestive and misleading questionnaire statements; Respondents are simply asked to rate their experience and express their expectation. This study is structured into segments with introduction as section one. Section two reviewed related literature. The methodology was detailed in section three, while result of estimation and discussion was captured in section four. Concluding remarks and policy implications were stated in section five.

## **2. Literature Review**

Electronic payment system is defined as a form of financial banking system that operates fund transfer through electronic means rather than physical transfer of cash (hand-to-hand), cheque and other financial relevant documents. The term electronic payment system is usually used in place of electronic banking, however, there are slight differences between them: electronic payment system involves transfer of funds, while electronic banking does not necessarily involve the transfer of funds. Other services offered online such as opening an account, checking account balance, blocking accounts, applying for loans are also included in electronic banking (Okeci & Oruan, 2013).

The payment system is a mechanism, that facilitates the transfer of money from an account in a bank to an account in another bank and as a result, its result in the economy is likened to veins that flow money to various economic unit (Golnabi, 2013). E-payment is a means of financial exchange that is carried out between a buyer and a seller and this financial exchange is facilitated by electronic communication. In other perspective, e-payment is a payment service that utilizes information and communication technologies, inclusive of cryptography as well as remote communication networks (Moertini *et al*, 2011).

The introduction of technology based payments systems has done a lot to increase the convenience of bank's customers, staffs as well as the society at large (Kelvin, 2012). Today, paying and receiving money between buyers and sellers are not necessarily done through raw cash. Such payment can be made using e-payment products such as ATM, internet, Point of Sale terminals (POS), and mobile money solutions and so on and so forth. Transferring of funds occur between financial institutions such as bank to bank, banks to credit unions and other institutions that perform financial transactions through electronic media. However, cash withdrawal occurs through Automated Teller System (ATM) or pay credit card through a designated personnel or bank with the help of electronic device which facilitates the movement of cash without the presence of both parties in the exchange (Ijeoma *et al.*, 2020).

Electronic payment system depends solely on a computer system that communicates using telephone lines. These computer systems take to record all transfers and ownership of funds and control the activities of both the customer and the institutions in the cash movement. It uses a unique means of identification (access code) to enable each individual access and be more confident in operating electronic means of fund transfer. Its essence is to secure the confidence and ensure the safety ways of using technological (electronic) means in carrying out financial

transactions within financial and non-financial institutions and thereby reduces the risk of carrying cash about. Electronic payment system as the technological innovative service delivery system that offers varieties of financial services like cash deposit payment of utility, cash transfer, cash withdrawal, cash borrowing, cheque and pass book request, account statement request and other necessary financial enquiries (Okeci &Oruan, 2013).

### **Customer Satisfaction**

Customer satisfaction leverage on the expectations and insight about the services offered. The satisfaction idea leverages on the numerous psychological and physical components. Electronic services have provided benefits for customer satisfaction in dealing with financial institutions with the number of services rendered to their customers. Customers find it very easy and satisfactory in operating in modern banking these days because most of the activities done are at their own convenient which has ended the era of queue system in the banking hall (Ijeoma et al., 2020). Satisfaction is defined as the overall customer approach towards service rendered or an emotional response to the differences between what customer expected and what is being offered, regarding the accomplishment of some need, goal, or desire (Hansemark & Albinson, 2004). Customer satisfaction can also be defined as a verdict following consumption knowledge about the particular service being rendered if it meets its expectation to the customer (Oliver, 1997). Kotler (2000) describes Satisfaction as an individual perception of enjoyment and dissatisfaction resulting from comparing a product or services apparent performance in relation to his or her expectations.

Satisfaction can be related with feelings which an individual derived from a particular product or service in a particular time. Most research affirms that the evidence of pre-consumption expectation is the factor of satisfaction. This explains that a customer has earlier stated the rate of performance of a product before consumption. In terms of consumption, customers' knowledge of the product helps in comparing its expected product performance level while judgment is drawn based on satisfaction comparison.

Customer satisfaction leads to customers' retention and this is a measure of how products or services meet or surpassed customer expectations. In a competitive market like the banking industry, it consists of various strategies aimed at keeping, meeting or exceeding customers' expectations. Saha and Zhao (2005) see customers' satisfaction as a collection of outcome of perception, evaluation and psychological reactions to the consumption experience with a product/service. In other words, it is a result of a cognitive and affective evaluation where some consumption standard is compared to the actually perceived performance. Thus, if the performance perceived is less than expected, customers will be dissatisfied, and where the perceived performance exceeds expectations, customers will be satisfied and this would lead to positive behaviours or outcome (Saha & Zhao, 2005). A satisfied customer tend to be loyal, takes less time, are less sensitive to prices and pay less attention to competitors advertising (Odusina & Onakoya, 2017)

### **Benefits of electronic banking**

According to Chimezie (2017), the benefits of electronic banking can be divided into two: benefits of e-banking to the bank customers and the benefits of e-banking to the bank.

**To the Customer:** Permanent access to the bank, Lower transaction costs/general cost reductions, Access anywhere, Less time consuming, Very safe and secure method and Helps to transfer the money immediately and accurately.

**To the Bank:** Banks need not open new branches as customers can have access to their accounts 24 hours a day. The customers do all the work themselves so staff numbers can be reduced. It reduces overhead costs (heating and lightening, insurance, salaries etc. It makes banks to be more competitive and creative in providing incentives to customers.

### **Theoretical Framework**

Negativity theory, the disconfirmation theory and the innovation diffusion theory are the theory used in the study. This research work hinges on the Disconfirmation theory which will form the foundation for hypotheses formulation, priori expectations and discussions of the findings

#### **Negativity Theory**

This theory developed by Gupta, P. K. (2008) suggests that any discrepancy of performance from expectations will disrupt the individual, producing negative energy. Negative theory has its foundations in the disconfirmation process. Negative theory states that when expectations are strongly held, consumers will respond negatively to any disconfirmation. Accordingly dissatisfaction will occur if perceived performance is less than expectations or if perceived performance exceeds expectations. This theory developed by Ikechukwu (2000) suggests that any discrepancy of performance from expectations will disrupt the individual, producing “negative energy.” Affective feelings toward a product or service will be inversely related to the magnitude of the discrepancy. This theory does not account for the direction of disconfirmation. It only indicates that any variation from what is expected will offend the customers and this will eventually lead to dissatisfaction.

#### **Disconfirmation Theory**

Disconfirmation theory argues that satisfaction is related to the size and direction of the disconfirmation experience that occurs as a result of comparing service performance against expectations. This theory differs from the Negative theory in that it accounts for the direction of the discrepancy between the actual experience and the expectation of the user. Szymanski and Henard found in the meta-analysis that the disconfirmation paradigm is the best predictor of customer satisfaction. Kannabira and Narayan (2005) cites an updated definition on the disconfirmation theory, which states Satisfaction is the guest’s fulfilment response. It is a judgment that a product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfilment, including levels of under- or

over-fulfilment. Based on this theory, when the banks advertise their various electronic payment systems to the banking public and customers use them, these customers will compare their experience with what they envisaged. There is likely to be some form of disconfirmation either positively or negatively. Confirmation occurs when actual experience of the e-payment service conforms to expectation. Disconfirmation occurs when the actual experience does not conform to expectation. In the positive sense, a customer gets more value and gratification than expected from using the e-payment service. In the negative aspect, the customer gets less value or gratification than expected. Confirmation or a positive disconfirmation will lead to satisfaction of the customers while a negative disconfirmation will lead to customer dissatisfaction.

### **Innovation Diffusion Theory (IDT)**

The innovation diffusion theory was postulated by Robinson T. in the year 2000. Robinson argues that people's aim to employ technology as a modality to perform a traditional activity. The crucial factor that determines the espousal of an innovation at the general level is as followed complexity, compatibility, relative advantage, trainability, and observability. Good number of banks has taken advantage of information communication technology in their operation in order to improve the standard of its operation. This recent innovation is being achieved through massive development of websites and mobile applications that befits the bank customers' needs. Customers are avail the opportunity to have access to bank operations in anywhere they go as long as there is the availability of the internet connectivity. This theory is concerned with the way in which a new technological idea, artifact or techniques or new use of an old one, migrates from creation to use. According to IDT, technological innovation is being communicated through a particular medium on time basis among the relative social system. Technological innovation passes through stages which includes: experience (expose to its existence and understanding its function); affiliation (the forming of favourable attitude to it); decision (engagement to its adoption); implementation (putting it to use); and confirmation (reinforcement base on positive outcome of it).

So many modifications have been put forward to check internet banking threat and fraud. Most users include learned class, people with high society status; more open to both mass media and inter-personal medium for communication and have more contacts with change agents. Mass media medium are relatively more vital at the experience stage, whereas inter-personal medium is relatively more vital at the persuasion stage. Innovation decisions might be optional (where individual or institutions has a real opportunity to accept or reject an idea) or authority based (where decision is being imposed by another individual or institutions which possess the necessary power, status or technical expertise). Barnes and Coritt (2013) recommend to managers the need for understanding a certain capacity of any technology and what it tends to offer and ensure its use is considered with their operations as well as understands relatively costs and constraints of operating that technology. Internet banking highly relied on the information communication technology since most of its operation is being done on the internet. Customers can interface with their account freely without being present in the banking hall.

## **Empirical Review**

Oduşina and Onakoya (2017) examined the relationship between electronic payment system and customer retention in banks. The method of analysis involved a comparative analysis of selected banks in Nigeria based on their long standing in the industry, competitiveness, and their level of ICT compliance. Also, questionnaire was drawn to capture the grey area of EPS, customers' retention, entrepreneurial development in banks. A total of 200 respondents answered the questionnaire, SPSS was used to analyze the respondents' outcome and the result showed positive and significant relationship between Electronic Payment System and Customers' Retention.

Omodele and Onyeiwu (2019) examined the impact of electronic banking service on customer satisfaction. The study specifically probed on the various dimensions of electronic banking service quality as well as on the relationship between customer satisfaction and the various electronic banking service quality dimensions. A descriptive survey research design was adopted. The sample size was 93 respondents. The main research instrument used was questionnaire. Data collected were analyzed using descriptive statistic followed by Pearson correlation, and regression analysis to test the hypotheses. The findings revealed that there is a significant relationship between customer satisfaction and the various electronic banking service quality dimensions and electronic banking service quality has significant impact on customer satisfaction.

Fenuga and Oladejo (2010) investigated the effect of electronic payment on customer service delivery in Nigerian banks as brought about by the problem of satisfying customer's need in Nigerian banking industry. Four commercial banks (United Bank for Africa, First bank, Zenith bank and Intercontinental bank) in Nigeria were studied using a survey design which focused on the population of the four selected commercial banks in Nigeria. One hundred (100) respondents were stratified proportionately amongst customers of the selected banks with the aid of questionnaire randomly administered. Chi-square and regression analysis were employed in testing whether there is significant relationship between the level of automation banking services and improvement in delivery of services to their numerous customers in Nigeria. The study concluded that electronic payment has significant impact on the services render by the banking industry in Nigeria thereby improves customer service delivery, better management efficiency, increased profit and customer satisfaction in Nigeria.

Nnamani and Makwe (2019) examined the impact of electronic banking on customer satisfaction. The study obtained data from 54 respondents using questionnaires and the obtained data were analyzed using the Chi-square method. The findings showed that electronic banking has improved customer satisfaction in Nigeria.

Ijeoma et al., (2020) examined the impact of electronic banking on customer satisfaction in commercial banks in Imo State. The study used primary data; the instrument used in gathering the primary data was questionnaire. The statistical tool of analysis used was the Pearson Product



Moment Correlation Techniques. The result revealed that there is positive relationship between electronic banking and customer satisfaction in United Bank for Africa Plc, Access Bank Ltd and Keystone Bank Ltd. It also revealed that there is positive relationship between Automated Teller Machine and Mobile Banking and customer satisfaction in United Bank for Africa Plc, Access Bank Ltd and Keystone Bank Ltd. More so, the study shows that there is a negative relationship between point of sale and customer satisfaction in the three (3) banks.

Simon, Thomas and Senaji (2016) examined the effect of electronic banking on customer satisfaction in selected Commercial Banks, Kenya. The study employed descriptive research design, sampling techniques and structural questionnaire and uses simple regression as its mode of analysis. The result showed that internet banking, automated teller machine and mobile banking prove to have satisfied the customers and was user friendly when using.

Jamil, Rima and Ibrahim (2018), studied the impact of E-Banking service quality on customer satisfaction: Evidence from the Lebanese Banking Sector. The study uses primary data which were gathered through survey instrument and adopted structural modeling, SPSS, and Amos in the data analysis. The findings revealed that reliability; efficiency; user friendly; responsiveness and communication; and security and privacy all have a significant impact on customer satisfaction.

Haadi and Ajibola, (2018), carried out a research on E-banking services impact and customer satisfaction in selected bank branches in Ibadan metropolis, Oyo state, Nigeria. The study adopted crosses sectional survey design and sampling Techniques as its methodology. The study used Pearson correlation as the mode of analysis. The findings showed that utilization of electronic banking products (ATM (98%), internet banking (85%), electronic transfer (97%). Constraints experienced include internet network failure, bank fraud and business loss due to failed e-transactions. Customers were satisfied with e-banking due to its cashless nature, cash accessibility, saves time from bank visitation and seamless transactions.

Ekienabor, Akpoguma and Arilesere (2018) investigated the effect of electronic banking on customer satisfaction in Nigeria. Questionnaire was administered to collect primary data. Hypotheses were formulated, tested and analyzed using Chi-square test with the aid of SPSS package. The results reveal that there is a significant relationship between poor interconnectivity and customers' patronage of electronic banking services. In addition, there is a significant relationship between service outages and customers' patronage of electronic banking services. Lastly, the study finds a significant relationship between electronic banking and customers' satisfaction.

Worku and Tafa (2016) on their study on impact electronic banking has on customer's satisfaction in comparing with traditional brick and mortar banking service. The study was conducted among 402 properly filled and returned questionnaires of e-banking customers and interview with four branches of the two commercial banks which have started e-banking service in Gondar city when this study was conducted. The study used tables, percentages, chi-square

independency test to see the relationship between demographic characteristics and e-banking, independency t-test to see the visits of branches before and after e-banking by customers is significant or not and regression analysis test has been conducted to explain the variables which determine customers' satisfaction in e-banking. The results of the study implied that majority of users of e-banking are the young. e-banking has improved customer satisfaction, reduced frequency of bank hall for banking service, reduced waiting time for customers, there are customers who don't know the fee charged for being e-banking users, the bank customers' satisfaction increased after being e-banking users, enabled customers to control their account movements and there is high opportunity to expand e-banking service in the city.

Mwatsika (2016) examined the factors influencing customer satisfaction with ATM banking. 353 ATM card users rated the performance of ATM banking in 25 service quality attributes and further rated their perceived satisfaction with ATM banking. The regression analyses of the performance of the 25 ATM banking attributes and customers' satisfaction first reveal that the 25 attributes adopted from empirical studies provide a perfect model for predicting customer satisfaction. Secondly, reliability and responsiveness are the key service quality dimensions of ATM banking and thirdly, the analyses revealed 12 key attributes that influence customers' satisfaction with ATM banking and these are: ATM fees charged, ATMs not out of order, cleanliness of ATMs and ATM stations, accuracy of ATM transactions, ease of access to ATMs, readable slips, convenient location, employee accessibility to solve ATM problems, privacy at ATM stations, employee speed in solving ATM issues, ease of application process for ATM cards and cash availability in ATMs.

Alabar, (2012), conducted research on 'Electronic Banking Services and Customers Satisfaction in the Nigerian Banking Industry. He sampled 400 respondents of some selected banks (FBN, UBA, Access, Diamond, GTB and Ecobank) across the six geopolitical zones of Nigeria, Abuja inclusive. He found out that Electronic Banking Services has significant influence on customers' satisfaction after testing his hypothesis using regression analysis.

Akhtar, Raza Siddiqi, Maqsood, Shouqat & Ijaz (2016) identified the dimensions of A.T.M service quality that effect the customer satisfaction. In banking sector data was collected through questionnaire with five point likert scale and sample size 100 by using convenience sampling technique. SPSS 20 used as statistical tests for the analysis of correlation and regression. Regression analysis found that positive and significant result relationship between price, reliability, responsiveness, convenience, security, service quality on customer satisfaction.

Lemma and Biruk (2017) studied the effect of ATM service quality on customer satisfaction in Ethiopian commercial Banks, using proportional stratified and simple random sampling technique and cross-sectional data collected from 190 customers of Ethiopian commercial banks, in DebreMarkos town. The data collected were analyzed using Statistical tools such as mean, standard deviation, correlation, and multiple regression model. The results indicated that except assurance, tangibility, reliability, responsiveness and empathy have positive and significant

effect on customer satisfaction and the customers were mostly satisfied with the responsiveness dimensions of ATM service quality. Furthermore, the tangibility, reliability, responsiveness and empathy significantly explained 79.2% of the variations on customer's satisfaction level.

### **3. Methodology**

In this study the researcher makes use of primary data which refers to data sourced by the researcher solely for the purpose of the study. The selected study area is Awka, Anambra state. Awka is the capital of Anambra State, Nigeria with an estimated population of 301,657 (Nigerian population census, 2006). The population of this study includes students and non-student bank customers in Nnamdi Azikiwe University, Awka, Anambra state Nigeria. The sample of the study focuses on 70 bank customers in Nnamdi Azikiwe University, Awka, Anambra state. This sample size was randomly determined by the researcher.

The sample include students and non-student bank customers from United Bank for Africa (UBA), Fidelity Bank, First Bank, Heritage Bank, Zenith Bank, Guarantee Trust Bank (GTB) and Access Bank. The study adopted probability sampling techniques – stratified sampling – in selecting respondents. This sampling techniques involved grouping the respondents into various strata based on the various commercial banks operational in Awka. Each strata consisted of respondents at United Bank for Africa (UBA), Fidelity Bank, First Bank, Heritage Bank, Zenith Bank, Guarantee Trust Bank (GTB) and Access Bank. Each stratum were made to comprise of ten (10) participants which were randomly selected, making up seventy (70) participants.

The instrument used for data collection is the research questionnaire which was developed by the researcher. The questionnaire contains close-ended questions relating to the objectives of the study. The questionnaire contains three (3) sections: A-C. Section A contains questions relating to demographic data of the respondents, such as; bank account status, marital status, bank and educational attainments; section B contains questionnaire items relating to customers' expectation of e-payment systems. Section C contains bank customers' actual experience from the use of e-payment system. The questionnaire has a five-point response pattern ranging from strongly agree, agree, undecided, disagree to strongly disagree.

The data were presented in tables as well as cross tables. The data gathered were analyzed using the descriptive methods and the paired sample t-test method. The computations were done using the Statistical Package for Social Sciences (SPSS) version 22. The criteria for analysis include; the mean difference the probability values of the t-statistic. The t-statistic shows the significance of the difference between the statistics (mean) of two samples. Thus, the t-statistic was used to test the difference between the experience and the expectation of the bank customers as well as the significance of the difference between their satisfaction in the banking system with and without e-payment systems. The hypotheses of the study were tested using the probability value (p-value) of the t-statistic. The decision rule is to accept the hypothesis of a significant effect if the corresponding p-value is less than 0.05. However, if the corresponding p-value is greater than 0.05, then the null hypothesis is confirmed and the effect is ruled as insignificant.

#### 4. Analysis and Findings

##### Demographic Profile of Respondents

Table 1 shows demographic characteristics of sampled respondents, which shows the distribution of sampled respondents, according to their preferred banking institution it indicates that 14.3% of each respondents comes from seven financial institution chosen. , the distribution of the sampled respondents according to Accounts status indicates that 37.1% of respondents are saving account holder, 35.7% current account holder and 27.2% savings & current account holder. According to education majority of the respondents are graduates (42.9%), followed by secondary school levelers (34.3%) and 12.8% post graduate holders while 10% are primary school holders. 52.9% of customer status are non-student while 47.1 are student Majority of the respondents are married (45.7%) and single (48.6%) while divorced are (5.7%)

**Table 1: Demographic Data of the Respondents**

Variable	Categories	Frequency	Percentage
<b>Bank</b>	Access Bank	10	14.3
	Fidelity Bank	10	14.3
	First Bank	10	14.3
	GTB	10	14.3
	Heritage	10	14.3
	UBA	10	14.3
	Zenith Bank	10	14.3
	<b>Total</b>	<b>70</b>	<b>100.0</b>
<b>Account status</b>	Savings account holder	26	37.1
	Current account holder	25	35.7
	Savings & Current account holder	19	27.2
	<b>Total</b>	<b>70</b>	<b>100.0</b>
<b>Education</b>	Primary	7	10
	Secondary	24	34.3
	Graduate	30	42.9
	Post graduate	9	12.8
	<b>Total</b>	<b>70</b>	<b>100.0</b>
<b>Customer Status</b>	Non-Student Bank Customer	37	52.9
	Student Bank customer	33	47.1
	<b>Total</b>	<b>70</b>	<b>100.0</b>
<b>Marital Status</b>	Divorced	4	5.7
	Married	32	45.7
	Single	34	48.6
	<b>Total</b>	<b>70</b>	<b>100.0</b>

**Source:** *Author's Compilation from Field Survey Results, 2021*

##### Data Analysis

The data were analyzed using the Paired Sample T-tests. In line with the objectives, the level of satisfaction with mobile banking services were measured using the mean differences while the significance of the satisfaction is measured using Paired Sample t-statistic. The results of the Paired Sample T-test are presented in tables according to the research objectives and were computed using the means responses. Based on the pattern of response (SA, A, U, D, SD), there are 5 responses with 4 intervals (1-2, 2-3, 3-4, 4-5) between them therefore a response range is computed as 4/5 which gives 0.8. Thus, the range for each response are as follows; 5.00 – 4.21 = Strongly Agree; 4.20 – 3.41 = Agree; 3.40 – 2.61 = Undecided; 2.60 – 1.81 = Disagree; 1.80 – 1.00 = Strongly Disagree.

#### 4.2.1 Automated Teller Machines and Customer Satisfaction

##### Objective one

To assess the level of customers' satisfaction in the use Automated Teller Machines (ATM) in the Nigerian banking systems.

**Table 2: Paired Sample Test Results for ATMs**

S/N	Questionnaire Items:	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	N	Mean (x)	Remark
1.	I expect ATMs to be very reliable	31	26	6	5	2	289	70	4.13	Agree
2.	I expect ATMs to be very easy to use.	28	28	5	6	3	282	70	4.02	Agree
3.	I expect ATMs to be accessible (available)	24	28	9	6	3	274	70	3.91	Agree
4.	I expect ATMs to be cost efficient.	45	18	5	3	1	309	70	4.41	Agree
	<b>Total</b>								<b>16.47</b>	
S/N	Questionnaire Items:	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	N	Mean (x)	Remark
1.	ATMs has actually been very reliable	8	6	15	26	15	176	70	2.51	Disagree
2.	ATMs has actually been very easy to use.	27	26	7	7	3	277	70	3.95	Agree
3.	ATMs has actually been accessible (available)	10	14	31	11	4	225	70	3.22	Undecided
4.	ATMs has actually been cost efficient.	23	26	6	8	7	260	70	3.72	Agree
	<b>Total</b>								<b>13.07</b>	
	<b>Mean Difference</b>								<b>3.40</b>	
	<b>Standard deviation</b>								<b>2.203**</b>	
	<b>Paired Sample t-test</b>								<b>12.913</b>	

Source: Survey Result, 2021 | \*\*Computed Using Excel

As shown in the table 2 a positive mean difference of 3.40 indicate that the expectation of customers about ATM use exceeds their actual experience.

### Paired Sample t-test

$$t = \frac{16.47 - 13.07}{2.203 / \sqrt{70}}$$

$$t = \frac{3.40}{0.2633}$$

$$t = 12.913$$

**H<sub>0</sub>:** Automated Teller Machines (ATM) payments has no significant effect on the customers' satisfaction in the Nigerian banking system.

**H<sub>1</sub>:** ATM payments has a significant effect on the customers' satisfaction in the Nigerian banking system.

The decision rule is to reject the null hypothesis if the tabulated t-statistic (d.f = n-1; critical value = 0.05) is greater than the calculated t-statistic, otherwise, the null hypothesis is accepted.

**Table 3: t-statistic Results of the Paired Sample Test for ATMs**

E-payment System	Calculated t-statistic	Tabulated t-statistic
ATMs	12.914	1.995

**Source:** Author's Compilation from SPSS Paired Sample Test Output, 2021

As shown in table 3, the calculated t-statistic (12.914) is greater than the tabulated t-statistic (1.995). This suggests a rejection of the null hypothesis, hence the alternate hypothesis is accepted. Therefore, an ATM payment has a significant effect on the customers' satisfaction in the Nigerian banking system.

### Point of Sales Terminals and Customer Satisfaction

#### Objective two

To ascertain the level of customers' satisfaction in the use Point of Sale (POS) terminals in the Nigerian banking systems.

**Table 4: Paired Sample Test Results for POS**

S/N	Questionnaire Items: EXPECTATION	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	N	Mean (x)	Remark
1.	POS is supposed to be very reliable	41	18	5	4	1	301	70	4.30	Strongly Agree
2.	I expect POS to be very easy to use.	37	23	4	3	3	298	70	4.25	Strongly Agree
3.	POS ought to be accessible (available)	46	16	6	3	1	309	70	4.41	Strongly Agree
4.	POS should be cost efficient.	25	27	9	5	4	274	70	3.91	Agree
	<b>Total</b>								<b>16.87</b>	
S/N	Questionnaire Items: ACTUAL	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	N	Mean (x)	Remark
1.	So far, POS has indeed been very reliable	29	26	7	5	3	283	70	4.04	Agree
2.	POS has indeed been very easy to use.	10	7	15	25	13	186	70	2.66	Undecided
3.	POS has been quite accessible (available)	11	14	32	10	3	230	70	3.29	Undecided
4.	POS has indeed been efficient.	24	27	6	8	5	243	70	3.47	Agree
	<b>Total</b>								<b>13.46</b>	
	<b>Mean Difference</b>								<b>3.414</b>	
	<b>Standard deviation</b>								<b>2.157**</b>	
	<b>Paired Sample t-test</b>								<b>13.244</b>	

**Source:** Survey Result, 2021 | \*\*Computed Using Excel

The mean difference value of 3.414 shown in table 4 also reveals that bank customers' expectation of the performance of POS services exceeds their actual experience.

#### Paired Sample t-test

$$t = \frac{16.87 - 13.46}{2.157 / \sqrt{70}} ; \quad t = \frac{3.414}{0.2578} ; \quad t = 13.244$$

**H<sub>0</sub>:** Point of Sale (POS) payments has no significant effect on the customers' satisfaction in the Nigerian banking system.

**H<sub>1</sub>:** POS payments has a significant effect on the customers' satisfaction in the Nigerian banking system.

The decision rule is to reject the null hypothesis if the tabulated t-statistic (d.f = n-1; critical value = 0.05) is greater than the calculated t-statistic, otherwise, the null hypothesis is accepted

**Table 5: t-statistic Results of the Paired Sample Test for POS**

E-payment System	t-statistic	Tabulated t-statistic
POS	13.244	1.995

**Source:** Author's Compilation from SPSS Paired Sample Test Output, 2021

As shown in table 5, the calculated t-statistic (13.244) is greater than the tabulated t-statistic (1.995). This suggests a rejection of the null hypothesis, hence the alternate hypothesis is accepted. Therefore, Point of Sale (POS) payments has a significant effect on the customers' satisfaction in the Nigerian banking system.

### 5. Discussion of Findings

The study aimed at assessing the relationship between electronic payment systems and customers' satisfaction in the banking system. The study examined two e-payment systems which include; ATMs and POS. Performance of the e-payment systems were measured on the grounds of reliability, ease of use, accessibility and efficiency. Questionnaires were distributed to 120 bank customers who reported their expectations and actual experience of the use of these e-payment systems. The data retrieved from the respondents were analyzed using the Paired Sample T-test. The findings showed that bank customers are not satisfied with the performance of ATMs in Nigeria. This finding is contradicts with the findings of Odusina (2014) who found a positive and significant relationship between ATM Usage and Customers' Satisfaction. Akhtar et al (2016) also found a positive and significant relationship between ATM services and customer satisfaction. This shows that there are still a lot of problems and shortfalls associated with ATM services.

On the other hand, the findings also revealed the customers' expectation about the performance of POS has significantly been short of expectations indicating dissatisfaction with the performance of POS payment systems so far. This finding supports the findings of Ijeoma et al., (2020) who found that there is a negative relationship between point of sale and customer satisfaction. It shows that bank customers' satisfaction in the banking system decreases with the use of POS payment systems. The findings indicate that there is a lot of improvement needed to be made by banks on POS services.

Despite the fact that majority of the studies reviewed suggest that customers are satisfied with e-payment systems in Nigeria, this study found that when satisfaction is measured by discrepancy between the expectation and actual experience of use (as specified by the Disconfirmation Theory), bank customers do not seem satisfied with the use of e-payment systems. Haadi and Ajibola (2018) also found that despite the fact that customers were satisfied with the cashless nature and time-saving features associated with e-banking, internet network failure, bank fraud and business loss due to failed e-transactions have been huge sources of dissatisfaction.



## 6. Conclusion and Recommendations

Based on the findings of the study, the researcher therefore concludes that there is so much room for improvement. Electronic payment systems have actually improved the quality of carrying out banking transactions. However, the bank customers are not satisfied with the condition and performance of the examined e-payment systems. By implication, bank customers would continue to prefer the adoption of e-payment systems even though the performance of these payment systems leaves a lot to be desired. Probably owing to huge charges associated with use, customers are not satisfied with their use of POS in the banking industry. ATM banking, convenient as it is said to be, has not really done enough to significantly improve customers' satisfaction in the banking services. This is probably associated with network issues and service charges associated with the use of ATM banking. Based on these the study recommends that The monetary authorities should liaise with commercial banks and other stakeholders to strategically install ATM machines in strategic areas to ensure increased accessibility. These machines should also be regularly stocked with cash to ensure that they are reliable. There should be a downward review of the charges associated with the use of point of sales terminals so as to encourage increased use and ease the pressures associated with the accessibility of ATMs. Banks should also continue to search for ways to improve the performance of the e-payment services by constantly seeking feedback from customers.

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