

## **IMPACT OF THE ELECTRONIC BANKING PRODUCTS AND SERVICES ON THE CUSTOMERS' SATISFACTION: A CASE STUDY OF KADUNA STATE, NIGERIA**

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### **ABSTRACT**

*This study examines the impact of electronic banking (EB) on customers' satisfaction (CS) in Kaduna State, Nigeria. The study specifically examines the impact of E-banking services (EBS) and E-banking products (EBP) on customers' satisfaction (CS). This study adopts a survey research design. Both quantitative and qualitative data were collected through informal interview, focus group and a structured questionnaire administered on sample of 400 respondents in the study areas of which 360 sets of questionnaire were correctly filled and returned. To present and analyze the data from the respondents, frequency distribution table and multiple regression analysis were used. The result shows that electronic banking services (EBS), and electronic banking products (EBP) have significant positive impact on customers' satisfaction (CS) in Kaduna State, Nigeria. Based on these findings, it is therefore, recommended that the Central Bank of Nigeria (CBN) should develop a policy framework that will enhance E-banking operation focusing on customers satisfaction through customers' oriented policies. Additionally, information technology providers in conjunction with banks should develop more friendly, risk free, effortless and efficient service delivery technology that will enhance customer's satisfaction.*

Keywords: Electronic Banking, Customer Satisfaction, E-banking services, E-banking Product

### **INTRODUCTION**

The intense competition witnessed in the banking sector in this 21<sup>st</sup> century and the need to cut down on personnel overhead and as well provide efficient services to catch up with global changes has necessitated a radical transformation from the tedious traditional way of banking to a more efficient modern Electronic system. However, the integration of customers into electronic banking is far from been realized (Farayibi, 2016; Simon & Thomas, 2016). Electronic banking services also referred to as electronic banking operations in some literature have become a popular way of conducting banking operation among money deposit banks in Nigeria. The fundamental change in business activities globally today is mainly, as a result of the emergence of Electronic banking operation (E-banking). More so, the sale of products and services are made less expensive as a result of E-banking operation. The introduction of information technology pave way to electronic banking which is the term use for banking services carried out on the platform of wireless network.

Wireless network services in banking industries appear to have reduced both the cost of operation and customer's waiting time. E-banking have equally save customers from undue interferences in daily banking transactions. The introduction of E-banking in Nigerian banks was slow, when compare with developed economy like United States, Switzerland, and Germany among

other developed nation. This could be attributed to some factors like educational level, level of development, information technology compliance, culture amongst others. However, the E-banking was adopted for the ease services it offers to both the bankers, customers, and the economy as a whole such include, it speed, accuracy, convenience and reduction in cash circulation.

However, waiting for service in many business service organizations such as financial institution is inevitable. This is because transaction must be prudently cross checked. However, excessive waiting can impair significantly on customer satisfaction. In this improved technology, organizations must conform to the improved standard of customer service. Meanwhile, customers' insatiable desire for efficient services has resulted to a paradigm shift from the traditional banking to the electronic platform. To achieve this, organization like financial institutions transformed their business systems by embarking on E-banking (Ovia, 2001). The E-banking system enables the customer to carry out banking activities through an electronic device such as Automated Teller Machine (ATMs) and Debit Cards Point of Sale Terminal Personal Data Assistants (PDAs), Mobile Phone (mobile banking & mobile money) amongst others. Customers are no longer only concerned about the safety of their funds but of the satisfaction derived from E-banking through efficient, fast and convenient banking services.

However, customer satisfaction is a much sought after phenomenon in today's highly competitive and globalized marketplace. Today's customers seek more than price deals but want useful, dependable and reliable technologies that will enhance their satisfaction. In view of this, many Nigerian banks have embraced the use of information and communication technologies in their service provision. Huge amounts of money have been invested in implementing the self and virtual banking services with the objective of improving the quality of service. However, the adoption of e-banking which is also driven by information technology has been reduced by low availability and cost of accessing the telecommunication infrastructures, lack of skilled staff, low internet services and low bank account among others (Jalal, Marzooq & Nabi, 2011; Simon & Thomas, 2016).

Empirical evidence in literature has shown that customers' dissatisfaction can lead to the profit decline of any business organization operating in the competitive market, banking industries are not exempted. A decline in bank profit tends to have negative impact on the economy such as economic instability, unemployment, reduction in investor's earnings, and bankruptcy among others economic challenges. Previous research studies on E-banking services and customers' satisfaction are inconclusive. For instance, Gvozdanovic and Solomon (2016), Bichanga and Ali, (2014); Ilo, Ani, and Chijioke, (2014); Tafa, (2013); Adewoye, (2013); Kwashie, (2012) & Fenuga and Oladejo, (2010);, argued that E-banking services have positive and significant impact on customers' satisfaction. They also conclude that there is a positive relationship between service delivery and electronic banking. Furthermore, they argued that the introduction of ICT has improved customer satisfaction.

On the other hand, Edesiri and Kigho, (2013); Onyedimekwu, (2013); Adeoye, (2012); Angelova, (2011) & Ojeka and Ikefan, (2011) posited that electronic banking has not improved customer satisfaction as they cited the difference between the anticipated and encountered benefits with major challenges being the security breach faced by the customers, technical problems and so on. From the foregoing, lack of consensus and divided opinion on the impact of electronic banking on customer satisfaction have created a vacuum in the contextual literature. Furthermore, the extent to which E-banking meet the needs and satisfaction of banks customers is an ongoing debate among the academia, policymakers, and stakeholders. The problems of electronic banking customers' dissatisfaction range from poor customer services delivery which includes, time wastage on the medium of electronic banking, inaccessibility of E-banking products, inefficient E-banking products, among others.

There are several studies on the impact of E-banking and customer satisfaction worldwide however, there is no study on the subject matter conducted in Kaduna state. More so, the methodologies adopted by several empirical studies reviewed were weak and the findings were inconsistent thereby creating a gap in the contextual literature. Thus, this study intends to contribute by minimizing this gap. In view of this, some questions are raised in this study on the exact impact of E-banking services and E-banking products on customer satisfaction in Kaduna State of Nigeria. Therefore, the general objective of this study is to examine the impact of E-banking on customers' satisfaction. Thus to achieve the set objective, the study proposes the following statements of null hypotheses:

H<sub>01</sub> E-banking services have no significant effect on customer satisfaction in Kaduna State, Nigeria

H<sub>02</sub> E-banking products have no significant effect on customer satisfaction in Kaduna State, Nigeria

The paper is organized as follows, following the introduction; section two gives a brief review of the literature while the methodology of the study is presented in section three. Also, section four presents data analyses and interpretation while the last section is for summary, conclusion and recommendation.

## **REVIEW OF LITERATURE**

Conceptually, electronic banking (E-banking) is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick and mortar bank. It is the delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channel (Imiefo & Pedro, 2012). An electronic banking is also defined as business services that utilize information and communication technology including an integrated circuit (IC), cards, cryptography, and a telecommunication network (Edisiri & Promise, 2013). Addae-Korankye (2014) describes electronic banking as a variety of the following platforms: online banking, telephone banking, T.V. based banking, mobile phone banking, and PC banking. For the purpose of this study, E-banking is defined as banking services conducted on the platform of wireless networks and mobile devices.

Customer satisfaction is a very common concept in the customer service industry such as banking. Nyadzayo (2010) defines customer satisfaction as the customer's fulfilment response. It is a judgment that a product or service feature provide a pleasurable level of consumption related to fulfilment including elements of under or over fulfilment. Zethaml (2003), customer satisfaction is identified by a response (cognitive or affective) that pertains to a particular focus (a purchase experience and or associated product) which occurs at certain time (post purchase, post consumption). Customer satisfaction is the total utility derived from the post usage of product and services. Customer satisfaction is proxy by service quality which components are reliability. Responsiveness, tangibility, assurance and empathy. Customer satisfaction is a function of E-banking products and E-banking services. E-banking products are the devices through which banks deliver their services which are geared toward customers' satisfaction. There are many electronic banking products, however, this study will focus on the most commonly used devices. They include Automated teller machine (ATM), Point of Sale (POS), Mobile Banking (MB) and Online Banking (OLB). ATM is a device that allows a customer to withdraw cash from his account via cash dispenser (machine) and his account debited immediately. POS is an electronic device that is use in verifying and processing credit card transaction. A retail POS system include computer, monitor, cash drawer, receipt printer, customer display and a barcode scanner. MB is a term use for performing cheque balance, account transactions, credit application and other banking transaction through device such

as a mobile phone or personal digital assistant. OLB is a term use for performing banking transaction via internet and computer. Electronic Banking Services (EBS) are intangible in nature, they are designed to provide support services to customer and create awareness on the usage of E-banking products. Customer awareness is the customer's right to be aware of the benefits and risks associated with its usage of the various E-banking product. E-banking support services are assistance given by back office staff on the usage of various E-banking product for example, seizure of ATM card, debit without payment, unusual charges, network downtime amongst others.

## **THEORETICAL ISSUES**

Theoretically, several theories have provided explanation on advanced technology and customer satisfaction. This study shall examine Innovation Diffusion Theory and Technology Acceptance Model.

### **INNOVATION DIFFUSION THEORY (IDT)**

This theory has shown that technological innovation is communicated through a particular channel over time among the members of a social system. From the concept of innovation diffusion, customers and organization adopts technology to perform activities that are advantageous (Roger, 1983). Therefore most banks have adopted ICT to improve their efficiency and service delivery. This technology is achieved through the development of website and mobile application that suits the customer's needs. This enable customers to assess their account anywhere as far they are connected to the internet. Rogers was convinced that the adoption of innovation follows a universal process of social change. It originated in communication to explain how, overtime, or product gain momentum and spread or diffuses through a specific population or social system.

### **TECHNOLOGY ACCEPTANCE MODEL**

Technology Acceptance Model (TAM) has been developed by Davis, Bagozzi and warshaw in 1987, as one of the most accepted model in the study of information technology. TAM is made up of two predictors namely Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). The primary aim of TAM is to provide an explanation on factors affecting the acceptance and rejection of information and communication technology. This study is anchored on TAM because bank management and customers believed that transition from traditional banking to electronic banking will reduce the operational cost, improve efficiency and most importantly enhance customer satisfaction.

Empirically, several studies have shown that there is a nexus between electronic banking and customer satisfaction. Simon *et al* (2016) examines the effect of electronic banking and customer satisfaction among the first-tier bank in Nairobi, Kenya. The study was hinged on innovation diffusion and contrast theories. The study adopted a descriptive survey design. Stratified sampling technique was used on 225 respondents. Primary data were generated using structured questionnaire. The result reveals that the flexibility of internet banking influence customer satisfaction to a great extent. However, this study focuses on the usage of E-banking products while little is known on the E-banking services rendered by the bank personnel which equally have an effect on customer's satisfaction. More so, the study methodology seems to be weak by using the only instrument of the questionnaire. Thus, this has created a vacuum in the contextual literature. Farayibi, (2016) examines the impact of the quality of service delivery on customer satisfaction in the Nigerian banks using Ordinary Least Square (OLS) methodology. The study established a positive relationship between

banks performance in service delivery and customer satisfaction through effective customer relationship management (CRM). Findings reveals that increase in the number of working days and number of bank branches have improved of customer satisfaction. Furthermore, the result reveals that the occurred increase in profit margin is attributed to improved standard of customer satisfaction while increase in number of bank branches has insignificant relationship with customer satisfaction. Mashood (2015) examines the perception of customers towards internet banking in the United Kingdom using respondents' survey technique. The data were analyzed using descriptive statistical tools like simple correlation. The result reveals that customer's perceived internet banking services as reliable and secured. However, the study focused on the perception of customers towards internet banking in UK but did not assess the implication of E-banking on customers' satisfaction. More so, the methodology adopted is inadequate by considering only questionnaire as an instrument of data collection. This method constrain the respondents to only options provided in the structured instrument. More importantly, this study is limited to the United Kingdom which may not be applicable to Nigeria due to economic and diverse cultural differences. To this end, the research is embarked upon to identify the implications of E-banking on customer satisfaction in developing country like Nigeria.

Mawutor (2015), conducted studies on impact of E-banking on the profitability of banks in Ghana using structured questionnaire for data collection. Statistical package for social sciences software was used for data analysis. The result shows that E-banking has a positive effect on Development Bank's profitability. Addai, Ameyaw, Ashalley and Quaye (2015) in a study on E-banking and Customer Satisfaction in Ghana adopted purposive sampling technique to sample respondents for administration of questionnaire. Statistical package for social sciences version 21 and multiple regression were used for data analysis. The result reveals that there is a positive correlation between customer satisfactions and E-banking. This is because the technology is available, reliable and convenient. Cudjie, Anim, Nii and Nyanofio (2015) investigate service quality and customer satisfaction in commercial bank in Ghana. The study use purposive sampling method to distribute questionnaire. Statistical Packages for Social Sciences (SPSS) was used in data analysis. The result reveals that all the five dimensions contributed positively to the quality of service delivery in Ghana Commercial Bank. Addae-Koronkye (2014), studies on the impact of E-banking on customer service and profitability of banks in Ghana using survey method, random sampling technique, and questionnaire for data collection. The result reveals that E-banking and ICT have impacted positively on customer service and profitability.

Ilo, Ani and Chijioke (2014) investigates the impact of technological innovation on the delivery of bank services in Nigeria. The study adopts a random sampling technique to distribute questionnaire for data collection. The result reveals a positive relationship between technology innovation and banks employee's performance. This is because, the introduction of the ICT improves customer satisfaction and retention. Oduşina (2014) in a study on Automated Teller Machine usage and customer satisfaction in Nigeria used a questionnaire for data collection. The Chi-Square statistical tool was used to analyze the data. The result shows that there is a positive and significant relationship between ATM and customer satisfaction.

Okoro (2014), studies on the impact of electronic banking instruments in the intermediation efficiency of Nigerian economy using data from 2006 – 2011. Multiple regression was used for data analysis. The result reveals that there is a significant relationship between ATM, POS, internet service and intermediation efficiency on Nigerian economy. Maduku (2014) studied the customers' adoption and use of E-banking services from the South Africa perspective. The study added trust, customer awareness and perceived self- efficacy as a predictor of E-banking adoption. A cross-sectional descriptive survey design was used to obtain data from 394 customers, it was concluded

that customers' trust is the strongest predictor of internet and cellphone banking services adoption. However, the study fail to consider other factor like demographic characteristic to arrive at the result and as such the result cannot be generalize as it is on one province.

Ibikunle and Oluwafemi (2012), investigate the impact of information technology on Skye bank of Nigeria. The study review the existing network design of the Skye bank and compared it to the proposed network design solution. The result reveals that information technology led to increase in customer satisfaction, improved operational efficiency, speed, better competitive edge, reduced running cost and usher in swift response in service delivery. Dixit and Datta (2010) investigate the factors affecting the acceptance of E-banking among adult customers. Questionnaire was distributed among 200 adult and the result shows that Indian adult are willing to adopt online banking if banks provide them with necessary guidance. However, many of these studies focus on the usage of E-banking products and the impact it has in banking industry while little is known on the E-banking services rendered by the bank personnel which equally have an effect on customers' satisfaction. More so, some of these studies methodology seems to be weak by using the only instrument of the questionnaire. Thus, this has created a vacuum in the contextual literature.

## **RESEARCH METHODOLOGY**

This study adopts a survey research design, primary data was sourced via questionnaire instrument, semi-structured interview and focus group discussion on the impact of E-banking (EB) on customer satisfaction in Kaduna State, Nigeria. Thereafter, both quantitative and qualitative data were triangulated for better research results. The primary data collected was measured on various scale ranges from nominal, ordinal and interval scale. The test employed in this study is multiple regressions. This study covered the socioeconomic background of the E-banking customers and the geographical location of the areas under study. Following the wider geographical limit of Kaduna State, the study sampling area is limited to some selected Local Government Areas (LGA) of the three senatorial districts of Kaduna State, Nigeria. The choice of these areas is based on the heavy economic activities, population density, as well as the perceived high concentration of E-banking services. These local government areas are Zaria, Lere, Sabon-Gari, Igabi, Kaduna South, Kaduna North, Zango, Jema'a and Kachia, The target population for this study comprises the entire E-banking customers who have a bank account with money deposit banks in the study areas. The population of Kaduna state is 6.3 million as at 2016 (National Population Commission). The eligible age for operating bank account in Nigeria is 15 years and above, while 3,619,980 (57.46% of the population) represent the number of people that are 15 years and above in Kaduna State, 42.54% of the population are within the age range of 0-14 years. 1,085,994 adults representing 30% of the population of Kaduna State are financially inclusive in 2017. The decline from 40% to 30% in bank account holders reflects a weakened banking system amid economic recession and currency depreciation in addition to the enforcement of the directive to link all bank accounts to Biometric Verification Number (BVN). This has led to so many accounts to be unlinked and therefore inaccessible (Wanga & Schueth 2018).

The sample size for this study is 400 respondents derived by applying Yamane (1973)

as follows:

$$S = \frac{N}{1 + N (ME^2)}$$

Where: S is the desired sample; 'N' is the population size; and 'ME' is the margin of error allowed to determine the sample size.

$$S = \frac{1,085,994}{1 + 1,085,994(0.05)^2} = 400$$

In carrying out this survey research, multi-stage sampling technique was adopted. In the first stage, all the local government in the three senatorial districts were listed, thereafter; the three most populous and economically vibrant local government councils (LGCs) in each senatorial zone were chosen for the administration of the questionnaire. The local government councils and their populations are shown below.

Table 1 *Sample size frame*

Senatorial District	LGCs	NPC Figure	Population Account holder	No of Respondents
Kaduna North	1. Zaria	406,990	143228.13	53
	2. Lere	339,740	119561.47	44
	3. Sabon Gari	291,358	102534.85	38
Kaduna Central	1. Igabi	430,753	151590.82	56
	2. Kaduna south	402,731	141729.30	52
	3. Kaduna North	364,575	128301.07	47
Kaduna South	1. Zango	318,991	112259.47	41
	2. Jema'a	278,202	97904.99	36
	3. Kachia	252,568	88883.86	33
<b>Total</b>		<b>3,085,907</b>	<b>1,085,994</b>	<b>400</b>

Source: Field Survey (2018) carried out by the researcher  
 However,

Electronic Banking Services (EBS) = AWEBS + EBSS

Electronic banking product = ATM + POS + MB + OLB

Equation 1 can be rewritten in a stochastic format thus:

$$CS = \beta_0 + \beta_1 EBS + \beta_2 EBP + \varepsilon \quad \text{Equation.....3.2}$$

Where;

$\alpha$  = intercept

$\beta_0, \beta_1$  and  $\beta_2$  are the parameters estimate

$\varepsilon$  = Measurement error. In this model, the main parameter of interest will be  $\beta_1$  in terms of sign and significance. Thereafter, econometric analysis using multiple regressions was employed.

## DATA ANALYSIS AND RESULTS PRESENTATION

This section presents data generated from the 360 returned questionnaire out of 400 distributed represents 90%, of which 40 among were interviewed and equally participated in focus group discussion. The results of data analysis are reported as follows.

**Table 3:** *Respondents views on the effect of E-banking services on customer satisfaction*

Options	Frequency	Percent	Ranking	Weighted mean	Ave mean
Strongly Agreed	80	22.2	5	400	
Agreed	170	47.2	4	680	
Neutral	10	2.8	3	30	
Disagreed	60	16.7	2	120	
Strongly Disagreed	40	11.1	1	40	
Total	360	100.0		1270	1270/360 = 3.5

Source: Researchers computation, using SPSS version 20 software, 2018

From the result, 69.4% of the respondents are of the view that E-banking services contribute to customer satisfaction significantly. E-banking services such as awareness of E-banking product through advertisement, billboard, positive word of mouth and the benefit associated with its use and as well as the risk encounter in the cause of banking operation More so, support services provided to customers by bank staff significantly have effect on their level of satisfaction. Likewise, 27.8% of the respondents stated that E-banking services did not contribute to customer satisfaction in Kaduna State. The reason could be attributed to lack of awareness on how to use the products, insincerity on the part of the bank in area of charges and incompetency on the part of the users on the use of the device. More importantly, commercial banks should educate and have back office staff (support staff) who will embark on massive training from the grass root to orient customers on the benefit and risk associated with the E-banking devices and how to protect their personal identification number (PIN). Subsequently, the weighted average mean score of the respondents on five Likert scales is  $3.5 > 3.0$  criterion value. This implies that in general, the respondents agreed that E-banking services (EBS) have a significant impact on customer satisfaction (CS) in the study areas.



**Analysis and Result 2:** Items number 10 - 12 in the structured questionnaire was raised to provide answer to research question two. The responses of E-banking customers was based on their perception as it related to the impact of E-banking product on customer satisfaction as reported in table 4 below.

Table 4

*Respondents views on the effect of E-banking product on customer satisfaction*

Options	Frequency	Percent	Ranking	Weighted mean	Ave mean
Strongly Agreed	190	52.8	5	950	
Agreed	100	27.8	4	400	
Neutral	0	0.0	3	0	
Disagreed	60	16.7	2	120	
Strongly Disagreed	10	2.8	1	10	
Total	360	100.0		1480	1480/360 = 4.1

Source: Researcher's computation, using SPSS version 20 software, 2018.

From the result 80.6% of the respondents agreed that E-banking has significantly contributed to customer satisfaction as against 19.5% that disagreed E-banking do not contribute meaningfully to customer satisfaction. Base on the result, E-banking has improve customer satisfaction. Subsequently, the weighted average mean score of the respondents on five Likert scales is 4.1 > 3.0 criterion value. This implies that in general, the respondents agreed that E-banking products (EBP) have a significant impact on customer satisfaction (CS) in the study areas.

However, the semi-structured interview affirmed that 65% of respondents strongly agreed that ATM medium provides more customers satisfaction than other channels of E-banking while 20% agreed that POS affect customer satisfaction and 10% believe that to an extent mobile banking contribute to customers' satisfaction. Only 5% said that online banking affect customer satisfaction. More so, the findings of the focus group discussion shows that the flexibility of online banking influence customer satisfaction to a great extent. In addition, many customers use online banking because it is easy to use while personalized online banking also affects customer satisfaction to a great extent. The study further concludes that the use of online banking and its friendliness internet has a relatively low effect on customer satisfaction. The study also concludes that convenience of mobile banking affects customer satisfaction to a great extent. Furthermore, the study concluded that user-friendly ATMs, ease of access to ATMs and privacy of ATMs affects customer satisfaction. In addition, using ATM cards in supermarket and affordability of ATM charges have a moderate effect on customer satisfaction. In relation to point of sale system, the study concludes that the effectiveness of point of sale system affects customer satisfaction/. Finally, it was clear that mobile banking has the highest effect on Customer satisfaction, followed by automated teller machines, then the point of sale system while online banking had the least effect on customer satisfaction. This finding is in consonant with the study of Simon *et al* (2016) which concluded that E-banking had various degrees of effect on customer satisfaction.

## REGRESSION RESULT AND TEST OF HYPOTHESES

This section present the result of the regression analysis and the test of hypothesis earlier formulated.

Table 5 *Multiple Regression Output*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.156015	0.105313	10.97693	0.0000
EBS	0.210341	0.043656	4.818117	0.0000
EBP	0.187994	0.041470	4.533258	0.0000
R-squared	0.768980	Mean dependent var		4.041667
Adjusted R-squared	0.767033	S.D. dependent var		0.920783
S.E. of regression	0.444431	Akaike info criterion		1.227006
Sum squared resid	70.31679	Schwarz criterion		1.270185
Log likelihood	-216.8611	Hannan-Quinn criter.		1.244175
F-statistic	394.9968	Durbin-Watson stat		0.056087
Prob (F-statistic)	0.000000			

Source: Researchers computation, using E-view 9 software.

Mathematically,

$$CS = 1.1560 + 0.2103EBS + 0.1879EBP$$

$$T\text{-tests} = (10.9769) \quad (4.8181) \quad (4.5332)$$

$$P\text{-value} = (0.0000) \quad (0.0000) \quad (0.0000)$$

$$F\text{-test} = 394.9968, R^2 = 0.7670, DW = 0.0560$$

Table 5 present the regression analysis of each of the explanatory variables stated in the model formulated. This explained the contribution of each of the explanatory variables to changes in independent variable. The results show that 1% improvement on E-banking services (EBS) lead to 0.21% rise in customer satisfaction. More so, 1% improvement on E-banking product effect a 0.1879% increases in customer satisfaction. These finding is in agreement with Moon (2013) which showed that there is a significant effect of tangible e-service quality on intangible e-service quality.

Furthermore, the regression result shows that  $R^2$ , which measures the goodness-of-fit, is 77%. This means that 77% changes in customer satisfaction can be explained by variables in the model while 23% can be explain by factor outside the model. The F-test = 394.9968 and Prob (F-statistic) = 0.0000 shows that the overall model is statistically significant at 5% level while the DW = 0.0560 shows there is the presence of positive serial autocorrelation. However, it is minimal as it is less than 2.00. The summary of the regression analysis shows that all the apriori signs meet the expected signs and all the variables were statistically significant at 5% level of significance based on the Student's t-test and p-value (0.0000).

**H<sub>01</sub>:** The results in the mathematical model using the student's t-test and p-value (0.0000) show that EBS is positively related to CS. The result also indicates that as EBS increases by 1%, CS also increases by 0.21% and vice versa. The EBS is shown to be statistically significant at 5% level of significance using the t-value and p-value. Base on this result, null hypothesis one which state that E-banking services do not have significant impact on customer satisfaction is rejected and the

alternative hypothesis is accepted. The study, therefore, concludes that E-banking services have a statistically significant impact on customer satisfaction in the Kaduna State of Nigeria.

**H<sub>02</sub>:** The results in the mathematical model using the student's t-test and p-value (0.0000) show that EBP is positively related to CS. The result also indicates that as EBP increases by 1%, CS also increases by 0.1879% and vice versa. The EBP is shown to be statistically significant at 5% level of significance considering the t-value of 4.5332 and p-value of 0.0000. Base on this result, null hypothesis two, which state that E-banking products do not have significant impact on customer satisfaction is rejected and the alternative hypothesis is accepted. The study, therefore, affirm that E-banking products have statistically significant impact on customer satisfaction in the Kaduna State of Nigeria.

## CONCLUSION AND RECOMMENDATIONS

An in-depth understanding on E-banking services and product as it affects customers satisfaction will enhance more usage, as well as increasing bank's profitability and in a long run boost the ease of doing business in Nigeria. In addition, better understanding on E-banking will enable the monetary authority to achieve the set objective of E-banking which is to regulate cash circulation in the country. It is therefore recommended that the Federal and Kaduna State government in collaboration with the Central Bank of Nigeria (CBN) and deposit money banks operating in the State should develop a policy that will enhance E-banking operation focusing on customer satisfaction in the State. This is achievable through a policy that will boost customers' awareness on E-banking services, products, and available security, safety and infrastructure as shown in the study of Simon *et al* (2016). Additionally, information technology providers in conjunction with banks should develop more friendly, risk free, effortless and efficient service delivery technology that will enhance customer's satisfaction. More importantly, commercial banks should educate and have back office staff (support staff) who will embark on massive training to orient customers on the benefit and risk associated with the E-banking devices and how to protect their personal identification number (PIN).

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