Impact of Information Communication Technology on Performance of Deposit Money Banks in Nigeria

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Abstract

The study examines the impact of Information Communication Technology (ICT) on the performance of Deposit money banks in Nigeria. Secondary data were collected from the quoted Deposit Money Banks and the central bank of Nigeria statistical bulletin. The study covered 10 years spanning from 2010 through 2019. The study used return on Assets as trend in scientific research and proxy for bank performance while the value transactions done through the ATM, Development POS, MP-Mobile payment platforms and value of transactions done through NIBSS Instant Payment (NIPV) were used to proxy Information Communication Technology (ICT). In other to ensure the validity and the reliability of our data, the study therefore subjected the data to a diagnostic test using Descriptive Statistic Analysis, Correlation Matric, Herteroskadaticity testing and ordinary least square analysis with the help of econometric view (E-view 10).Empirical evidences from the hypothesis tested indicated that that (ATMV and POSV) has a positive and significant impact on return on assets (ROA) of banks in Nigeria. On the other hand, MPV has positive but insignificant impact and finally, NIPV and were found to have a negative but significant impact on ROA of quoted banks in Nigeria. The study recommends that every bank in Nigeria should not only invest heavily on ICT especially the POS, but should distribute same to business outlets where business owners and customers will have access to smooth and hassle-free transactions. It is therefore necessary for the government to emphasize the need for more policies that will boost the efficiency in utilization of ICT equipment by reducing the cost of acquiring them so as to reduce cost and boost the growth of the economy.

Keywords: Information Communication Technology, Automated Teller Machine, Point of Sale, Mobile payment and NIBSS Instant Payment

INTRODUCTION

One of the modern yardsticks used for rating a modern business enterprise is its Information Communication Technology (ICT) infrastructural layout. This is an indication of the importance of ICT for business establishments (Luka and Frank 2012). Banks in particular adopt information and communication technology to improve the efficiency and effectiveness of services offered to customers, improve business processes, as well as to enhance managerial decision making and workgroup collaborations.This helps strengthen their competitive positions in rapidly changing/emerging economies. Environmental, organizational, and technological factors are creating a highly competitive business environment in which customers are the focal point. Furthermore, these factors can change quickly, sometimes unpredictably (Oyekola, 2018). Thus, the growth of any enterprise is tied to retaining loyal customers, improving productivity, cutting costs, increasing market share, and providing timely organizational response. ICT is a major enabler for dealing with these issues. Because the pace of change and the degree of uncertainty in today's competitive environment are accelerating geometrically (Oyekola, 2018). Despite the rapid growing adoption of the information technology tools to improve banking operations through the use of SMS, Internet, online banking and real time gross settlement, Nigerian banks are still facing a lot of challenges in their operations so as to increase their productivity, enhance quality of service delivery and also minimize the average operating cost and time (Binugo, and Aregbeshola, 2014).

ICT affects all processes associated with modern day banking. From the daily routines of preparing payroll and order entry, to strategic activities such as the acquisition of a company, ICT surfaces as a key element. In View of the importance of ICT in the banking industry, a number of research works have been carried out. Despite the obvious benefits attributed to electronicpayment method in Nigeria, it has not come without somechallenges. One of the major challenges negating againstelectronic payment methods in Nigeria is the tendency offraudsters to clone ATM cards and hack into bank depositors'accounts (Shehu & Ogare2013). These acts have become asource of fear and worry to electronic payment users andhave even discouraged some from enrolling into the EPM (Electronic Payment Methods) platforms. Ultimately, thebanking industry may have been adversely affected since thevolume (value) of

transactions that would have boosted itsprofitability has been reduced.Technology has indeed influenced the performance of all Nigerian Banks in the last decade. This period has been associated with the provision of dynamic customers focused on banking services, improved regulation and high profitability. Binugo and Aregbeshola (2014) assert that recent advances in the technological world giving birth to the emergence of information and communication technology (ICT) have led to remarkable changes in the ways businesses are run in contemporary times. This development is underscored by contemporary advancements engineered by the knowledge economy. It is also important to state that modern banking in Nigeria is driven by the outputs from robust local and global research and development. It is in an effort to establish the prevailing trend in the adoption of ICTs in the operations of Nigerian deposit money banks that the researcher has chosen this topic in order to find out the impact on the financial performance the Deposit Money Banks. This study formulates the following null hypotheses which will be tested in the course of the study to form a basis for a decision to be made.

$HO_{1.}$ ATM transactions has no significant impact on return on asset of Deposit Money Banks in Nigeria
$HO_{2.}$ POS transactions has no significant impact on return on asset of Deposit Money Banks in Nigeria
HO_3 Mobile payment transactions have no significant impact on return on asset of Deposit Money Banks in Nigeria.
HO_4 NIBSS Instant Payment (NIP)transaction has no significant effect on Return on assets of Deposit Money Banks in Nigeria.

LITERATURE REVIEW

Conceptual Framework

Concept of Information and Communication Technology

Information and communication technology simply refers to as the gathering, storing, manipulating and transferring information. It is the automation of the process, controls and information production using computers, telecommunication, software and ancillary equipment such as Automated Teller Machine and Debit Cards. It is a term that generally covers the harnessing of electronic technology for the information needs of a business at all levels. ICT deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another. Roger (2016) opined that ICT is a synergy between computers and communication devices and forms an important part of the modern world. Thus, the most significant shortcomings in the banking industry today is a wide spread failure on the part of senior management in banks to grasp the improvement of technology and incorporate it into their strategic plans. Yousafzai (2012) asserts that ICT Banking adoption is a complex and multifaceted process and joint consideration of customers' personal, social, psychological, utilitarian and behavioural aspects is more important than adoption itself and will ultimately result in the intended behaviour. It is imperative that all these innovations aimed at having a competitive edge are related to the profitability of banks (Akombo, 2011).

Concept of Deposit Money Banks (DMBs)

In a bit to conceptualize the deposit money banks, the concept of the banking industry in general has to be taken into consideration. The financial institution in Nigeria is categorized into two namely, the depository bank and non-depository banks, The DMBs basically falls under the depository banks or the deposit money banks, though its performs various functions as the opening of account where depositors (surplus unit) make payment into their account for safe keeping and this deposit is given out as loans to interested customers (deficit unit) who seek for such loans for investment purposes. According to Investopedia (2017) deposit money bank is a financial institution that provides various financial services, such as accepting deposits and issuing loans. Deposit money bank customers can take advantage of a range of investment products that deposit money banks offer like savings accounts and certificates of deposit. The loans a deposit money bank issues can vary from business loans and auto loans to mortgages. CBN (2016) further reiterates that commercial banking business in an economy consisting of changing cash for bank deposit and bank deposit for cash transferring same from one person or corporation to another, giving bank deposit in exchange for a bill of exchange, government bonds, the secured or unsecured promise of business to repay. This concept of banking portrays the underlying fact that bank as an organization principally is concerned

with the accumulation of temporarily idle money of the general public purposely for advancing same to others for expenditure. The study captures basically the deposit aspect of the deposit money banks and interbank transaction with the aid of the ICT tools.

Performance (Return on Asset)

Performance is the dependent variable in this research and it is proxied by return on Assets (ROA). Performance can be described as a measure of how well a firm can use assets from its primary mode of business to generate revenues. It shows how efficient the management of an organization uses the assets at its disposal to generate profit. Performance of a business can be measured using different proxies. Abaenewe, Ogbulu, and Ndugbu (2002) proxied performance using return on asset (ROA) and return on equity (ROE). However, it is pertinent to note that firms' profitability is not the only performance measure of an organization. Ibukunle and James (2012), Olorunsegun (2010) and some other researchers have measured performance in a different perspective like productivity, increase in sales, cost reduction, competitiveness, efficiency, and effectiveness. This study, therefore, measures banks' performance using return on assets (ROA) which is consistent with that of Abaenewe et al (2013). Emekekwue (2008) sees the return on assets (ROA) as a ratio that seeks to measure the amount of profit made from the entire assets of the firm. It is expressed as Profit before tax Total Assets. Ekwe and Duru (2012) opines that return on assets (ROA) was used as dependent variables because it is an indicator of managerial efficacy. Return on assets (ROA) is a dependent variable. It is the quotient of dividing profit after tax by total assets. Lazaridis and Trynidis (2006), Falope and Ajilore (2009), Singh and Pandy (2008) and Karaduman et al (2011) agrees that the formula for return on Assets (ROA) is express as Profit before tax over Total Assets.

Automated Teller Machine (ATM)

This is an automated teller machine that dispenses cash and basically performs all other functions done by a teller in a banking hall like balance inquiry, give mini statements and bills payment, recharge functions etc. A personal identification number (PIN) has to be entered along with credit or debit card to access cash. Some ATMs will allow for cash deposits and bill payments. The CBN has approved N55 as income to the bank from the 4th transaction done by the cardholder of another bank's card on the ATM terminal. It is a cash point that can be used to withdraw cash or do Transfers. A debit card or credit card is used at the machine to withdraw cash. The CBN has stipulated 72 hours for responding to ATM complaints by banks, failing which the customer can escalate to the CBN. The CBN is also trying to establish a card arbitration panel that will act as a payments system ombudsman to fast track resolution of disputes. We should also note that card fraud particularly at the ATM have reduced drastically with the migration of cards to adopt the chip + PIN technology.

Point of Sale (POS) Machine

Point of Sales (POS) machine or terminal is an electronic device used in payment for goods and services. You find it in supermarkets, hotels, filling stations, shops etc. A charge known as Merchant Service Charge (MSC) is charged on all transactions done on POS terminals, this charge is borne by the merchant. The maximum total fee a merchant can be charged for any POS terminal transaction is 0.75% of the transaction value or N1,200.00 cap. Point of Sale refers to the location at which a payment of a card transaction occurs, usually by way of a device such as a credit card terminal or cash register. The industry has endorsed four manufacturers for the supply of Point-of-Sale terminals - PAX, Bitel, Ingenico, and Verifone - with negotiated discounts and local support arrangements. A POS can be purchased from any of these four for as low as N45,000.00 per terminal. However, parties are free to purchase POS terminals from any manufacturer; so far they meet the POS specifications in the Point-of-Sale guidelines.

Mobile Payment

It is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website via electronic devices like mobile phones, Ipads, laptops, Desktops e.t.c right at the comfort of their homes, offices and other places of convenience. In Siyanbola, (2013) internet banking, like uses the electronic card infrastructure for executing payment instructions and final settlement of goods and services over the internet between the merchant and the customers). Internet banking gives

customers the opportunity of enjoying banking services from the comfort of their homes and offices. This means that customers can buy goods by placing orders from the net, instruct their banks to pay the vendor the invoice amount involved, and the products are delivered to the destination where the buyer wants.

NIBSS Instant Payment (NIP)

NIP was introduced in 2011 as a real-time interbank payment service predominantly used for single payment transactions (low volume). This service is offered across major banking channels in Nigeria including branch, internet, and mobile banking. For NIP, if you are using your personal computer log into your bank's internet banking platform. Click account transfer tab to expand it. Click on transfer to another bank (instant). If you are using mobile money android application, select NIP. If you are using it for the first time activate it with your token. Then click new request. Select add new beneficiary to add the receiver's bank account details. Fill all required details and enter the code from your token device. Then send. Transfer to other banks will incur charges. The options of NEFT and NIP are also provided in the funds transfer forms in the banks. Hence you can perform any of the two by visiting your bank and complete the funds transfer, indicating NEFT or NIP as your Preferred transfer type.

Empirical Review

Nwakoby, Charity and Ofobruku (2018), examines the impact of information and communication technology on the performance of deposit money banks in Nigeria between the periods 2006 to 2015. The log-linear regression model was used to test the impact of various forms of information and communication technology on the banks return on equity (ROE), the computation of the result was done using the econometric computer software package, e-view version 8.0. The result shows that the adoption of various forms of information and communication technology has greatly influenced the quality of banking operations, performance and has specifically increased banks return on equity. Information and communication technology usage can sustain returns on equity of deposit money banks in the long run. The study recommends that investment in information and communication technology should form an important component in the overall strategy of banking operation, as these will make Nigerian banks to be more efficient, profitable, and competitive. Oyinkola (2018) conducted a study on the impact of Information technology on banking operations in the First bank of Nigeria PLC. The data used was primary data and the research instruments used are questionnaires and personal interview for staff and customer of the bank. Simple frequency percentage was adopted as the statistical and the hypothesis was analyzed using Chi-square. The result revealed that IT has greatly improved the growth and performance of Nigerian commercial banks and has led to increased customers satisfaction. The study recommends government support to improve local IT firms to foster importation, the lower tariff on the importation of IT related equipment and their agencies and regulatory bodies to upgrade their equipment as well. Gap: The data analysis used in this study was primary data and the tools of data analysis was Chi-square. The researcher used secondary data in the study and consider autoregressive distributed lag model as tool of data analysis which make the difference clear.

Jenevive and Anyanwaokoro (2017), investigated the effect of Electronic payment Methods (EPM) on the profitability of commercialbanks in Nigeria. In order to achieve the broad objective, the study specifically investigated the effect of Automated TellerMachine (ATM), Point of Sale (POS) and Mobile Payment (MPAY) on the profitability of commercial banks in Nigeria. Atotal sample of five (5) banks was considered for the period 2009 to 2015 and the study adopted the Panel Least Squares (PLS) estimation technique as the analytical tool. Data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletinand Annual Reports and Statements of Accounts of the five banks used in the study. Findings revealed that Automated TellerMachine (ATM) and Mobile Phone payment have significant effect on the profitability of commercial banks in Nigeria.However, Point of Sale (POS) has an insignificant effect on commercial banks' profitability in Nigeria. The studyrecommended, among others, that commercial banks in Nigeria should sponsor media campaigns in order to boost theawareness on Automated Teller Machine (ATM) payment and Mobile Phone payment methods so as to further increase theirprofitability.

Luka and Frank (2012) examined the impact of ICTs on banks: A Case study of the Nigerian Banking Industry, collected data via questionnaires from customers in the selected banks. Guaranty Trust Bank plc, First Bank of

Nigeria plc, Zenith Bank international and United Bank for Africa (UBA). The response were measured with a 5 pointer likert - type rating, where strongly agree (SA) = 5; Agree (A) = 4; Neutral (N) = 3; Disagree = 2; Strongly Disagree = 1. The results of the research indicated that investment in the ICT system and infrastructures has become a key element in productivity and growth in the banking industry. The study recommended that banking industry in Nigeria should make more facilities available for proper monitoring of the inventions.

Theoretical Framework

Contingency Theory

The contingency theory was proposed by Austrian Psychologist Fred Edward Fiedler in his landmark 1964 article. Contingency theory suggests that an information system should be designed in a flexible manner so as to consider the environment and organizational structure confronting an organization. Information systems also need to be adapting to the specific decisions being considered. In other words, information systems need to be designed within an adaptive framework. Review of accounting information system literature also indicates that most AIS studies have incorporated contingency factors such as organizational structure, business strategy, and environmental condition in their research model but have neglected the influence of IT on AIS design. According to Lamminen et al. (2015) contingency approach assert that neither the type of strategy, nor the organizational configuration will directly affect performance. Rather, contingency theory suggests that the most important determinant of performance is the contingent fit between the chosen strategy and its contextual variables. Similar to IT researches, these studies viewed IT from the technological perspective only but failed to incorporate other perspectives of IT sophistication such as informational, functional and managerial. Hunton and Flowers (1997) suggested that a more comprehensive AIS study is needed to explain the relationship between IT and accounting and its subsequent impact on the organization in general and accounting/accountants in particular. Very few of such studies have been carried out in developing countries especially in the Middle East. Due to the continuous flow of considerable amount of empirical studies which investigate the contingency factors and accounting and/or IS and indicates the importance and vitality of this theory, this study is theoretically and empirically constituted upon contingency theory which has long been applied in both accounting and information system disciplines.

Bank-Focused Theory

This theory was popularized by Kapoor (2010) andanchors on the premise that banks use non-traditional butconventional low-cost delivery channels to offer services toits customers. Such channels include the automated tellermachines (ATMs), mobile phone banking, Point of Sale (POS) among others. In using these channels, the bank offersa wide range of services to its customers regardless oflocation and branch attachments. All that is required is toenter the needed information into the system and thetransaction is done. This theory underpinning this study since theemphasis here is on electronic platforms as means ofdelivering services.

Bank-Led Theory

The bank-led theory of branch less banking was postulated by Lyman, Ivatury and Staschen (2006) and emphasizes the role of an agent who acts as a link between the banks and the customers. In this case the retail agents have direct interaction with the banks customers and the perform the role expected of the bank by either paying cash or collecting deposits. Finally, this agent is expected to transmit all his dealings with the banks customers to the bank he is representing through electronic means (such as phones, internet, etc.).

Non-Bank-Led Theory

This theory was popularized by Hogan (1991). Here customers do not deal with any bank and they do not maintain any bank account. All that the customers have to deal with is a non-bank firm such as mobile network operator or prepaid card issuer who they exchange their cash with for e-money account. The e-money account is then stored in the server of this non-bank agent. This tends to represent the riskiest platform in the electronic payment methods because of lack of existing regulatory framework upon which these e-agents operate.

METHODOLOGY

This study employed ex-post facto research design to describe the impact of Information Communication Technology on the performance of deposit money banks by using existing data from financial statement of the quoted firms which cannot be manipulated. The study covered all listed Deposit Money banks from 2010 to 2019. The period was chosen as the cashless policy took effect in Nigeria in 2012. This study made use of secondary data as the main source of information and was sourced from the annual report and accounts of the banks and data from CBN payment statistics from 2010 to 2019. The data on the ICTs products (ATM transactions, POS transactions, Internet banking transaction, NEFT and NIP transactions) were analyzed using Descriptive Statistic Analysis, Correlation testing, and autoregressive distributed lag (ADRL) with the help of E-view 10 package. The panel linear regression model used in this study is adapted from the prior studies of Shehu (2013) and Ogare, (2013) with modification. Consistent with previous studies, this model modified and extended the model tested by prior studies and the autoregressive distributed lag (ADRL) was guided by the following linear model

Y = F[X1, X2, X3]……..…….....……. (i)
Performance = ∫ [ATM, POS,IB, NIP, NEFV, FSIZE] ……..(ii)
Based on the above model, we specify the following regression equation
$ROA = \beta 0+\beta 1_{ATMv} +\beta 2_{POSv} +\beta 3_{MPv} +\beta 4_{NIPV} +\varepsilon$……..……..... (iii)

Where:

ROA denotes the return on assets (the proxy for DBMS Performance)
ATMV = Volume of Transactions done through the Automated Teller Machine
POSV = Value of Transactions done through the Point-of-Sale machine
MPV = Value of Transactions done through the internet banking
NIP = Value of Transactions done through NIBSS Instant Payment
ε is the error term of the model and;
β0, β1, β2, β3 …=Regression model coefficients.

RESULT AND DISCUSSION

Descriptive Statistics

In order to have glimpse of the data used in the study, a first pass at the data in form of descriptive statistics was carried out. This gives us a good idea of the patterns in the data used for the analysis. The summary statistics is presented in Table 1.

Table 1: Descriptive Staticstis

	ROA	ATMV	POSV	MPV	NIPV
Mean	24.86108	3884.360	877.0021	990.2870	34022.68
Median	21.61443	3825.065	380.2921	394.4105	22785.28
Maximum	43.72281	6512.608	3204.753	5080.965	105222.6
Minimum	12.76633	399.7100	12.72000	6.650000	0.000000
Std. Dev.	10.28294	2203.334	1113.048	1564.608	36145.69
Skewness	0.804263	-0.101265	1.166346	2.006080	0.867540
Kurtosis	2.311222	1.717709	2.938099	5.859074	2.488871
Jarque-Bera	1.275738	0.702204	2.268870	10.11322	1.363230
Probability	0.528417	0.703912	0.321604	0.006367	0.505799
Sum	248.6108	38843.60	8770.021	9902.870	340226.8
Sum Sq. Dev.	951.6496	43692111	11149881	22031987	1.18E+10
Observations	10	10	10	10	10

Source, E-view 10

From Table 1, it is observable that the mean of each respective distribution is not exactly situated at the middle (median) of the distribution. Except for point of sales value (POSV) and mobile payment, the mean of every other

data set is not far away from their respective median's values. This indicates that majority of the individual listed DMBs have observations for each respective variable, close to the average observation. This is true as regards to Return on Assets (ROA), automobile teller machine value (ATMV) and NIBSS Instant Payment (NIPV) other than POSV and MPV whose mean is far above its respective median, suggesting that the majority of the firms have point of sales value (POSV) and mobile payment figures lower than average. This presupposes that only few deposit money banks carry the large proportion of the total point of sales value (POSV) and mobile payment transaction value in the banking industry in Nigeria. It suggests high concentration or dominance of few on the many, thereby making competition difficult for the smaller banks that might have newly entered the industry.

Looking at the standard deviation on the basis of the assertion that 60% of a normally distributed data set falls within the range of ±1, it is evident that the entire variables failed to satisfy this assertion. On the basis of standard deviation therefore, it can be concluded that the data set isnot normally distributed. The skewness indices for all the data sets seem to be positive, except for ATMV indicating more observations to the left of the normal curve. As it is, data outlier is normally associated with negative skewness, so on the basis of this study only ATMV has a negative skewness. Variables with value of kurtosis less than three are called platykurtic (fat or short-tailed), and all the variables qualified for this during the study period except for MPV. Jarque-Bera test shows that all the variables are normally distributed as their probability values were found to be greater than 5% significant level. In summary, the descriptive statistics revealed that on a general note, the data sets are normally distributed.

Correlation Matric

The Pearson correlation analysis matrix shows the relationship between the explanatory and the explainedvariables and also the relationship among all pairs of independent variables themselves. It is useful in discerningthe degree or extent of the relationship among all independent variables as excessive correlation could lead tomulticollinearity, which could consequently lead to misleading findings and conclusions. The correlation matrixdoes not lend itself to statistical inference but it is relevant in deducing the direction and extent of associationbetween the variables. Table 2 presents the correlation matrix for all the variables.

Correlation Analysis

Covariance Analysis: Ordinary
Date: 08/23/21 Time: 19:39
Sample: 2010 2019
Included observations: 10

Correlation Probability	ROA	ATMV	POSV	MPV	NIPV
ROA	1.000000				

ATMV	0.818871	1.000000			
	0.0038	-----			
POSV	0.940674	0.484669	1.000000		
	0.0001	0.0021	-----		
MPV	0.857446	0.703183	0.541921	1.000000	
	0.0015	0.0233	0.0000	-----	
NIPV	0.920407	0.506940	0.729406	0.317795	1.000000
	0.0002	0.0003	0.0000	0.07322	-----

Source, E-view 10

Table 2 showed that the correlation between the dependent variable, ROA, and the independent variables, ATMV, POSV, MPV and NIPV on one hand, and among the independent variables themselves on the other hand. Generally, a high correlation is expected between dependent and independent variables while a low correlation is expected among independent variables. According to Gujarati (2004), a correlation coefficient between two independent

variables 0.80 is considered excessive, and thus certain measures are required to correct that anomaly in the data. From Table 2, it can be seen that all the correlation coefficients among the independent variables are below 0.80. This points to the absence of possible Multicollinearity. The correlation between the dependent variables shows that all the independent variables have a strong and positive correlation with the dependent variable Return on assets.

Table 3: Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.693352	Prob. F(4,5)	0.6278
Obs*R-squared	3.567813	Prob. Chi-Square(4)	0.4676
Scaled explained SS	0.718843	Prob. Chi-Square(4)	0.9490

Source, E-view 10

The table above indicates the result of heteroscedasticity for the aggregated variables of the study. The goodness of fit test which is a statistical hypothesis test to show how sample data fit a distribution from a population with a normal distribution shows a Obs. R-square of 3.567813 and prob. of 0.4676 which are above 0.05. This indicated that the adjustment of the observations problems is well and no errors exist underlining the general fitness of the model.

Table 4: Regression Analysis

Dependent Variable: ROA
Method: Least Squares
Date: 08/23/21 Time: 20:04
Sample: 2010 2019
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ATMV	0.007687	0.002055	3.740162	0.0134
POSV	0.045725	0.009262	4.936644	0.0043
MPV	0.002417	0.001928	1.253243	0.2655
NIPV	-0.001652	0.000414	-3.990821	0.0104
C	8.722688	2.779203	3.138558	0.0257

R-squared	0.974224	Mean dependent var	24.86108
Adjusted R-squared	0.953604	S.D. dependent var	10.28294
S.E. of regression	2.214926	Akaike info criterion	4.735167
Sum squared resid	24.52948	Schwarz criterion	4.886460
Log likelihood	-18.67584	Hannan-Quinn criter.	4.569200
F-statistic	47.24521	Durbin-Watson stat	2.247061
Prob(F-statistic)	0.000366		

Source, E-view 10

Discusion of Result

The table 4 above indicates the R^2 value is 0.97; and it means that the model has successfully predicted the variables. This implies that 97% changes in performance (ROA) are explained by the ATMV, POSV, MPV and NIPV. The value of 95% of the Adjusted R-squared indicates that there is a strong relationship between the dependent and the independent variable as also pointed out in the correlation analysis. This shows a strong explanatory power of the

model. Finally, the Prob (F-statistic is 0.000366, less than 0.05 and the Durbin-Watson stat of 2.24> 1.7 shows absence of positive serial correlation among the variables in the model.

Test of Research Hypothesis One

With respect to Automated Teller Machine (ATMV), based on the t-value of 3.740162 and P-value of 0.0134, table 4 was found to have a positive influence on our sampled quoted deposit money banks (ROA) and this influence is statistically significant at 5% level of significance. This result, therefore suggests that we should reject our null hypothesis one ($H0_1$) which states that ATMV transactions have no significant effect on return of assets (ROA) of deposit money bank in Nigeria. This means that in Nigeria, there is a high-level usage of ATMV machines by customers of the sampled banks in Nigeria and this high usage level of bank's ATM machine influences the ROA of the sampled banks positively, thus, leading to the bank's better performance. Therefore, as this influence is statistically significant, management should pay more attention on the activities that will improve the ATM services of their banks if they wish to increase the ROA value of their banks as this will lead to high customer's satisfaction and patronage as the study discovers that such efficient ATM services will influence their ROA positively. Therefore, on the basis of efficient use of ATM transactions to generate increased ROA, those firms that embark on more activities that improves their ATM services performance better than those with less ATM transactions in Nigeria. The present study corroborated the study of Jenevive and Anyanwaokoro (2017) who found out that ATMV have significant impact on performance. This finding supports our prior expectation as we expect that the use of ATM will lead high performance of ROA of banks in Nigeria. The study findings agree with the findings of Obiekwe and Anyanwaokoro (2017) and did not negates the findings of Oyewole, Abba, El-maude, Gambo and Abam (2013) out rightly but that the positive performance is noticed after two years.

Test of Research Hypothesis Two

In consideration of POSV, based on the t-value of 4.936644 and P-value of 0.0043, in table 4was found to have a positive influence on our sampled quoted DMBs (ROA) and this influence is statistically significant since the P-value is within5% significance level. This result, therefore suggests that we should reject our null hypothesis two ($H0_2$) which states that there is no significant influence of POS transactions on return of assets (ROA) of deposit money banks in Nigeria. This means that in Nigeria, there is a high-level usage of POS machines by customers of the sampled banks in Nigeria and this high usage level of bank's POS machine influences the ROA of the sampled banks positively, thus, leading to the bank's better performance.The present study substantiates the study of Jenevive and Anyanwaokoro (2017) who found out that POSV have significant impact on performance

Test of Research Hypothesis Three

Similarly, for Mobile Payment (MPV), based on the t-value of 1.253243 and P-value of 0.2655, in table 5 was found to have a positive influence on our sampled quoted DMBs (ROA) and this influence is not statistically significant since the P-value is more than 5% significance level. This result, therefore suggests that the study should accept our null hypothesis three ($H0_3$) which states that mobile payment transactions have no significant influence on return of assets (ROA) of deposit money banks in Nigeria. This means that in Nigeria, there is a poor level usage of mobile payment (MP).

Test of Research Hypothesis Four

Consequently, in consideration of NIPV, the t-value of -3.990821and P-value of 0.0104, in table 4 was found to have a negative influence on the sampled quoted deposit money bank's (ROA) and this influence is statistically significant since the P-value is below5% significance level. This result, therefore suggests that we should rejectthe null hypothesis four ($H0_4$) which states that NIPV transactions have no significant reactions on return of assets (ROA) of DMBs in Nigeria. This means that in Nigeria, there is a high-level usage of NIPV services by customers of the sampled banks in Nigeria and this high usage level of bank's NIPV transaction influences the ROA of the sampled banks negatively, thus, leading to the banks better performance but this influence is statistically significant and therefore, should be ignored by managements when planning to improving their ROA value through NIPV

transactions. Theses finding do not support our prior expectation and also agrees with the findings of Abaenewe, Ogbulu, Onyemachi and Ndugbu (2013) and negates the findings of Alagh and Ene (2014).

CONCLUSION AND RECOMMENDATIONS

This study investigated the impact of Information Communication Technology (ICT) on financial performance of deposit money banks in Nigeria. The study attempted to provide empirical evidence of the impact of the E-banking products (ATMV, POSV, MPV and NIPV) on the financial performance of deposit money banks in Nigeria. Findings from the study revealed that that (ATMV and POSV) has a positive and significant impact on return on assets (ROA) of banks in Nigeria. On the other hand, MPV has positive but insignificant impact and finally, NIPV andwere found to have a negative but significant impact on ROA of quoted banks in Nigeria. On the basis of the findings and conclusions of the study recommends among others that:

i. Deposit money banks Management should pay more attention on the activities that will improve the ATM services of their banks if they wish to increase the ROA value of their banks as this will lead to high customer's satisfaction and patronage.

ii. Investment in ICT has been proven to enhance the performance of Nigerian commercial banks. The banks should therefore give emphasis to efficient utilization of the ICT enabled services such as credit and electronic cards to pay at retail outlets, points of sales (POS), phone banking, electronic payment debit, Automated Teller Machines (ATM), home banking, internet banking, mobile banking, personal digital assistant banking.

iii. The study recommends that every bank in Nigeria should not only invest heavily on ICT especially the POS, but should distribute same to business outlets where business owners and customers will have access to smooth and hassle-free transactions. It is therefore necessary for the government to emphasize the need for more policies that will boost the efficiency in utilization of ICT equipment by reducing the cost of acquiring them so as to reduce cost and boost the growth of the economy.

References

Abaenewe, Z. C., Ogbulu, O. M., &Ndugbu, M. O. (2013).Electronic banking and bank performance in Nigeria.*WestAfrican Journal of Industrial and Academic Research*, 6 (1):171 – 187.

Adewoye, J. O. (2013). Impact of mobile banking on servicedelivery in the Nigerian commercial banks. *InternationalReview of Management and Business Research*, 2 (1): 333 –344.

Akombo, T.S., (2011). *The impact of ICT on profitability in the Nigeria banking industry focus on some selected banks*: Seminar Paper Presented to the Department of Business Management, Benue state University

Anyanwuokoro M. (2008). *Methods & Processes of BankManagement*, Enugu, Johnkens& Willy Publication Nig. Ltd.

Balogun, E.O., (2016). Effect of information technology on organizational performance Nigerian banking industries. *Research Journal of Finance and Accounting,* 3(1) 12-17

Binugo, A.O. and R.A. Aregbeshola, (2014).The impact of information communication technology on commercial bank performance.*Problems and Perspective in Management*,12(3): 59-68.

Central Bank of Nigeria Statistical Bulletin (2020).*CentralBank of Nigeria:* Abuja.

Furzaneh, H., (2012). An analysis on the impact of information and communication technology on deposit money banks.*International Journal of Management Sciences*, 5: 12-18.

Houndmills. Dabwor, T.D., O. Ezie and P. Anyatonwu, (2017). Effect of ICT adoption on competitive performance of banks in an emerging economy, the Nigerian experience.*Journal of Humanities and Social Science,* 22(8): 81-89.

Hudgins, (2006). Bank management & financial services. 6th Edn., New York: McGraw-Hill.

Hunton, B. and K. Flowers, (1997). *Introduction to information technology and decision making.*The MacmillianEdu Ltd.

Ikpefan, O.A. and M. Agwu, (2015). Leadership of modern financial institutions and the changing paradigm of Banking in Nigeria. *Journal of Internet Banking and Commerce*, 20(3) 1-17.

Jenevive, J. K and Anyanwaokoro, T. (2017). Effect of Electronic payment Methods (EPM) on the profitability of commercialbanks in Nigeria.*International Journal of Management and Sustainability,* 7(4), 240-247.

Lamminen, J., H. Forsvik, V. Voipio and L. Lehtonen, (2015). Decision making process for clinical it investments in a public health care organization–contingency approach to support the investment decision process.*Finnish Journal of eHealth and e-Welfare, 7(2-3): 122- 134.*

Luka, M.K. and I.A. Frank, (2012). The impact of ICTs on banks: A case study of the Nigeria banking industry. *International Journal of Advanced Computer Science and Applications,* 3(9): 145-149.

MacKinnon, J.G., A.A. Haug and L. Michelis, (1999). Numerical distribution functions of likelihood ratio tests for cointegration. *Journal of Applied Econometrics,* 14(5)563-577.

Madueme, I.S., (2010). Banking efficiency and information technology in Nigeria: An empirical investigation.*International Journal of Economics and Development* 8(1 &2): 86-96.

Maiyaki, A.U. and S.M. Mokhtar, (2010). Effects of electronic banking facilities, employment sector and age – group on customers choice of banks in Nigeria. *Journal of Inter Banking and Commerce*, 15(1).

Markurdi.Anyanwuokoro, M., (2008). *Methods & processes of bank management*. Enugu: Johnkens& Willy Publication Nig. Ltd.

Nwakoby, N. P, Charity, P.S.,&Ofobruku, S. A., (2018). Impact of information and communication technology on the performance of deposit money banks in Nigeria between the periods 2006 to 2015.*International Journal of Management and Sustainability,* 7(4), 225-239.

Olatokun, W.M. and L.J. Igbinedon, (2010). The adoption of automated teller machines in Nigeria: An application of the theory of diffusion of innovation. *Issues in Informing Science and Information Technology,* 6: 373-393.

Oluwagbemi, O., J. Abeh and P. Achimugu, (2011). The impact of information technology in Nigerian banking industry.*Journal of Computer Science and Engineering*, 7 (2) 185-191

Oyinkola, S., (2018). The impact of information technology on banking operations in First Bank of Nigeria PLC. Available from www.researchclue.com.

Roger, E.M., (2016). *Diffusion of information*. 6th Edn., New York: The Free Press. Rose, P.S. and S.C. *Journal of Inter Banking and Commerce*, 15(1).

Shehu, U. H., Aliyu, M., & Musa, A. F. (2013). Electronicbanking products and performance of Deposit Money Banks.*American Journal of Computer Technology and Application*,1(10): 138 – 148.

Wilson, U.A., C.O. Odo and E. Ikenna, (2014). The impact of information technology on bank profitability in Nigeria.*African Journal of Science, Technology, Innovation and Development,* 6(1): 31-37.

Yousafzai, S., (2012). A literature review of theoretical models of ICT banking adoption at the individual level financial services marketing, systemic financial crises: Containment and resolution. Cambridge, UK: Cambridge University Press.