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The Effect of Electronic Banking on the Operations of Deposit Money Banks in Nigeria (2006-2020)

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ABSTRACT

The main aim of this study was to examine the effect of electronic banking on the operational performance of deposit money banks in Nigeria. Specifically, it sought to determine the effect of automated teller machine transactions, electronic mobile banking transactions, point of sale terminals transactions on the operational performance of deposit money banks in Nigeria. The study adopted the ex post facto research design and covered the period from 2006 to 2020. Ordinary least square regression and Granger Causality tool was used for the analysis of the data obtained. The results of the study reveal that automated teller machine transactions have positive and significant effect on the operational performance of Deposit money banks in Nigeria while both point of sale terminal transaction and mobile banking transactions have negative and insignificant effects on the operational performance of Deposit money banks in Nigeria. The study recommends that Deposit money banks and monetary authorities should sensitize the banking public on the proper use of electronic banking transactions to lessen the frequent cases of errors, fraud and malfunction.

KEYWORDS: *Electronic banking, Deposit money bank, Return on asset, Automated Teller Machine (ATM), Electronic mobile banking (EMB) and point of sale (POS)*

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1. INTRODUCTION

Electronic banking has become an integral part in the operations of any banking institution Nigeria as well as globally. Electronic banking (E-banking) has gradually become an indispensable part of modern day banking services. All over the world, banking industry is one of the industries that have adopted technology which helped in rendering better and quality services to customers. The quality of services is enhanced using technological innovations. Technological innovations have continued to engender speed of transactions and prompt service delivery in banks, thus promoting customers' convenience and satisfaction.

Electronic banking is a form of banking in which funds are transferred through an exchange of electronic signals rather than through and exchange of cash, cheque or other types of paper documents. They also occur between financial institutions and commercial institutions such as stores. Whenever someone withdraws cash from an automated teller machine (ATM) or pays for groceries using debit card (which draws the amount owed to the store from savings or checking account), the funds are transferred via electronic banking. There are various electronic banking systems, and the range in size. Examples are Automated Teller Machine, mobile banking, Telephone banking, internet banking, television based banking, PC banking etc. Following the introduction of electronic banking and internet automated teller machines (ATMs) which are the initial cornerstones of electronic finance, the increased adoption and penetration of mobile banking and Internet banking has added a new distribution channel to retail banking: Internet/Online-banking. Raza et al (2020) defines online banking as a type of e- banking that allows customers to use multiple banking services, pay bills and make investments as an effective scheme of ecommerce and as a partner. As a result of rapid advancement in IT and intensive competition in the banking sector, the adoption of e-banking is being increasingly used as a channel of distribution for financial services. (Mahdi & Mehrdad, 2010 cited in Fonchamnyo, 2013). Before

the introduction of electronic payment into Nigerian banking system; customers had to walk into the banking hall to do transactions of all kinds. They had to queue up and spend more hours to talk to a teller to make their transactions. Inconveniences caused by these long queues discourage most customers who sometimes renegade from the queues in annoyance. Today the ATM, Mobile, Web, and POS are major e-payment channels currently in use in Nigeria and you can conveniently make use of the services without going to the bank. In the recent years, electronic banking has been viewed as a driving force that is changing the landscape of the banking industry. Despite the high volume of transactions carried out through electronic channels, the implementation of electronic banking comes with numerous problems which may make it challenging for the concerned banks to implement. The most critical of these challenges is lack of infrastructure. Implementing a seamless electronic banking requires the installation of hi-tech information and communication technology infrastructure which requires huge cash outlay. Furthermore, electronic banking requires uninterrupted electricity supply and for the most part, this has become an intractable problem in Nigeria. Another problem associated with its implementation is the low internet penetration in the country especially in the rural areas (Ovia, 2005). Abaenewe et. al, (2013) also identified some of the problems of implementing electronic banking in Nigeria to include increase in internet fraud, high maintenance costs for equipment, low literacy level among the populace and manpower requirement etc.

Generally, this study simply looks at the effect of electronic banking on the operations of deposit money banks in Nigeria. However, it specifically tackles the effect of Automated Teller Machine (ATM), Electronic mobile banking (EMB) and point of sale (POS) terminal transactions on the operations of deposit money banks in Nigeria.

This study is divided into five sections. Sections one reveals the introduction; section two dealt with the review of related literature. The method of analysis was explained in section three; section four gave insight on basic findings, while section five concluded the study and offered some recommendations

2. LITERATURE REVIEW

E-Banking has obscured the boundaries between different financial institutions, enabled new financial products and services and made existing financial services available in different packages.

The definition of e-banking varies slightly amongst researchers, this is because e-banking is a service delivery medium to banks and encompasses many different platforms, Electronic banking may be defined as a means whereby banking business is transacted using automated processes and electronic devices such as personal computers, telephones, fax machines, Internet, card payments and other electronic channels. Some banks practice electronic banking for informational purpose, some for simple transactions such as checking account balance as well as transmission of information, while others facilitate funds transfer and other financial transaction (Awoyale, 2021). Another definition of E-banking was the one given Basel Committee on Banking Supervision (2003). According to this report, E-banking is expected to have provision for small value & retail banking services & products electronic channels and also large volume of electronic payment include many other wholesale services which the banks can deliver electronically. In regards to the field of financial services, E-banking has been observed to be an e-commerce product.

Deposit money banks are the most important savings mobilizing and financial resource allocation institutions. Consequently, their roles make them an important phenomenon and strong pillar in economic growth and development. Deposit money banks which are also known as commercial banks are financial institutions that provide services, such as accepting deposits, giving business loans and auto loans, mortgage lending, and basic investment products like savings accounts and certificates of activities deposit. In performing these roles, deposit money banks must realize that they have the potentials, scopes and prospects of mobilizing financial resources and allocating them to productive investments and, in return, promote sustainable performance and ensures that businesses are flourishing and alive. Ali, Jatau and Ashami (2016), asserted that the functions of deposit money banks are numerous, all aimed at satisfying the financial needs of the various sectors of the economy. It is also a known fact that commercial banks (deposit money banks) exists primarily to make profits. They make profits by accepting deposits from customers and granting credits to interested individuals, companies, and other organizations and institutions at an agreed interest rate. This profitability is one of the major yardsticks for determining the financial performance of banks. The profit indicators of deposit money banks include: return on assets, return on equity and net interest margin (Dare & Okeya, 2017). Over the years, banks' profitability in terms of their return on assets (ROA) have witnessed various changes. The World Bank data reveals that the return on assets for the banking sector in Nigeria was 2.56% in 2000

which then decreased to 1.75 % in 2006. The lowest record of ROA was -12.83 % in 2009. In 2018, the return on assets stood at 2.03 percent (FRED, 2021).

Many theories have been developed and discussed in the process of determining the effects electronic banking on the operations of deposit money banks. These theories are: The Technology Acceptance Model, the Extended Technology Acceptance Model, Innovation Diffusion Theory and the Theory of Planned Behavior. However, this study is anchored on the Innovation Diffusion Theory. The theory was developed by Everett Roger in 1983, it explains that when the currency outside banks diminishes as a result of the increase in the use of electronic forms of payment, particularly ATM other e-card products, as well as banking habits, the intermediation efficiency will be positive.

The empirical studies reviewed were as follows; Ugwueze and Nwezeaku (2018) studied the relationship between electronic banking and the performance of Nigerian commercial banks. The study became necessary due to the increased adoption of the electronic banking which has redefined the banking service both in Nigeria and internationally. Electronic banking was proxied by value of Point-of-Sale transactions while commercial banking performance was proxied by customers' deposits. Engle-Granger co-integration model was used to analyze data for the sample period January 2009 to December 2013. The results show that POS is not cointegrated with both the savings and time deposits but are cointegrated with demand deposits. It is recommended that the monetary authorities and commercial banks should embark on an all-inclusive enlightenment campaign for the banking public on the benefits, convenience and importance of adopting e-banking channels in completing their transactions.

Njeru and Omagwa (2018) in a study of mobile banking and bank profitability in Kenya sourced primary data from 60 respondents through a structured questionnaire and analyzed the data using descriptive analysis and multiple regression analysis. The study found that transactions had a statistically significant effect on profitability while electronic funds transfer services and customization did not have a significant effect on profitability of tier 1 commercial banks in Kenya.

Obiekwe and Anyanwaokoro (2017) examined the effect of Electronic Payment Methods on the profitability of commercial banks in Nigeria. Using a sample of five banks for which data was collected from central bank of Nigeria statistical bulletin and analyzed using Panel Least Squares estimation technique analytical tool. Findings revealed that Automated Teller Machine (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 study thus recommended that commercial banks should sponsor media campaigns in order to boost the awareness on Automated Teller Machine (ATM) payment and Mobile Phone payment methods so as to further increase their profitability.

Moazenzadeh & Hamidi (2018) discuss restrictions in terms of accessibility of the use of internet banking which caused a shift toward the innovation of mobile banking. They did a study on 732 banking customers given their age, gender, and educational level. The findings demonstrated that the client age has insignificant impact on the use of any more advanced technology communication channel, so they are willing to adopt any new technology. The results also showed that the bank's clients are fortunate to pay for improved services while benefiting from its advantages. The launch of new technology does not affect their trust in using such technology.

Eze and Egoro (2016) examined the impact of electronic banking on the profitability of commercial bank in Nigeria. The study sought to examine the relationship between different e-banking and the profitability of commercial banks in Nigeria. Four e-banking channels (automatic teller machines, electronic mobile banking, internet banking transactions, and point of sales services) were identified and regress against the profit before tax of commercial banks operating in Nigeria between 2006 and 2014. The study used the confirmed ECM model (via residual diagnosis) to test the formulated hypotheses. The results revealed that the over impact of electronic banking on the profitability of commercial banks was significant; whereas, the impact of the individual channels was varied. The study recommends, amongst others that, commercial banks should intensify effort to deploy more ATM delivery points and also make them more effective and efficient and that the regulatory authorities should also collaborate with the banks to put in place an enabling operating environment and regulatory framework to bring out optimal deployment of these services to customers. This is especially with respect to addressing the issue of failed transactions.

Oladejo (2016) observed that commercial banks in Nigeria have adopted one form of e-payments or the other. However, the pattern of adoption is yet to be substantiated. Therefore, the influence of such adoption on profitability of the adopting banks is worthy of exploration. This study focuses on the

impact of four (ATM, POS, web/Internet and mobile) e-payments adoption and banks specific variables on profitability of the Nigerian Deposits Money Banks (DMBs). Secondary data were obtained from annual report and accounts of ten quoted (DMBs) between 2005 and 2012. Data were analyzed using panel logistic regression. The overall result from data analysis shows that when bank adopt e-payment systems, their performance level, such as gross margin, profits after tax, return on assets and return on equity changes.

In a study carried out by Okoro (2014) on the effect of Point of sales, Automated teller machine, Mobile & internet services values of the intermediation of the economy. The technique adopted in the study is the multiple regressions which were carried out on time series data which ranged from 2006 to 2011. It was observed in the study that a significant relationship exists between POS, ATM, services from the net & the intermediation efficiency of the economy. Nevertheless, it was equally revealed in the study that a significant relationship does not exist between the Nigerian economy & the mobile service value & intermediate efficiency in the study period. The study concluded that the POS, ATM & internet service is major instrument the customers use to make money deposits. It was therefore recommended in the study that more efforts should be made by the relevant stake holders in advertising these products in the country.

Amu and Nathaniel (2016) carried out a study on the relationship between electronic banking and the performance of Nigerian commercial banks. Electronic banking was proxied by value of Point of Sale transactions while commercial banking performance was proxied by customers' deposits. Engle Granger cointegration model was used to analyze data for the sample period January 2009 to December 2013. The results show that POS is not cointegrated with both the savings and time deposits but are cointegrated with demand deposits. It is recommended that the monetary authorities and commercial banks should embark on an all-inclusive enlightenment campaig for the banking public on the benefits, convenience and importance of adopting e-banking channels in completing their transactions.

Siam (2006) examined the effect of electronic banking on bank's profitability in Jordan. The population of the study included all working banks in Jordan which have sites on the internet for the periods of 1999-2004. The result from the data analysis that were gathered from the study instrument (questionnaire) showed that there is a correlation with statistical significance between electronic banking and banks profitability; showing a negative effect in profitability in the short run and a positive effect in profitability in the long run. Thus, managers and banks employees in the area prefer their banks to expand their electronic operation in servicing customer but not converting all banks to total electronic bank.

Abaenewe, Ogbulu and Ndugbu (2018) investigated the profitability performance of Nigerian banks following the full adoption of electronic banking system. The study became necessary as a result of increased penetration of electronic banking which has redefined the banking operations in Nigeria and around the world. Judgmental sampling method was adopted by utilizing data collected from four Nigerian banks. These four banks are the only banks in Nigeria that have consistently retained their brand names and remain quoted in the Nigerian Stock Exchange since 1997. The profitability performance of these banks was measured in terms of returns on equity (ROE) and returns on assets (ROA). With the data collected, we tested the pre and post-adoption of e-banking performance difference between means using a standard statistical technique for independent sample at 5 per cent level of significance for performance factors such as ROE and ROA. The study revealed that the adoption of electronic banking has positively and significantly improved the returns on equity (ROE) of Nigerian banks.

3. METHODS

The study adopted the ex-post facto Research design. The population of this study consists of all the twenty-three (23) deposit money banks in Nigeria as at 31st December, 2020. This study used secondary data, sourced from Central Bank of Nigeria (CBN statistical bulletin of 2006-2020). Data used in this study were presented using tables. The time series data will be analyzed using the Granger Causality test to examine the existence of cause and effect among the variables. On the other hand, the Ordinary Least Square regression method will be used to examine the relationship between the variables.

The modified models of Fadare (2010) and Rehman (2011) were used in this work. The mathematical form of the model is specified in a functional relationship as follows;

ROA = f(VATMT,VEMBT,VPOST) …… (1)

Where: ROA = Return on asset

VATMT = Volume of Automated Teller Machine Transactions

VEMBT = Volume of Electronic Mobile Banking Transactions

VPOST= Volume of Point on Sales Transactions

The OLS linear regression equation based on the above functional relation for models 1 is econometrically stated as:

$ROA = \beta 0+\beta 1VATMT+\beta 2VEMB+\beta 3VPOST + \mu$ (2)

Where μ=error/stochastic term.
β_o = intercept/constant,
β1-β3=coefficient of parameters,

We applied some notations to simplify the represented dependent and independent variables as listed above, three (3) explanatory variables which are; operational performance (ROA) as a dependent variable, while Volume of ATM Transactions (VATM), Volume of Electronic mobile banking transactions (VEMBT) and Volume of Point on sales Transactions (VPOST), are all explanatory variables.

4. RESULT AND DISCUSSION

The time series data on Value of ATM Transactions (VATMT), Value of Electronic Mobile Banking Transactions (VEMBT), Value of POS Transactions and Return on Assets (ROA) of deposit money banks are all represented in table 4.1.

Table 4.1: Time Series Data on VATMT VEMBT, VPOST and ROA

Year	VATMT (N'Billion)	VPOST (N'Billion)	VEMBT (N'Billion)	ROA (%)
2006	63.2	20.2	0.1	0.38
2007	131.6	6.4	0.1	-1.59
2008	399.7	16.1	0.7	0.37
2009	548.6	11.03	1.27	-0.87
2010	399.71	12.72	6.65	0.33
2011	1561.74	31.02	18.98	-0.08
2012	1984.66	48.0083	31.5093	0.2
2013	2828.94	161.016	142.797	2.33
2014	3679.88	312.072	346.467	2.29
2015	3970.25	448.513	442.354	2.41
2016	4988.13	758.997	756.897	1.48
2017	6437.59	1409.81	1102	0.48
2018	6480.09	2383.11	1974.25	0.88
2019	6512.61	3204.75	5080.96	0.37
2020	12004.1	2806.3	9428.51	2.82

Source: *CBN Statistical Bulletin, (2020); NDIC Annual Report (2006-2020)*

As shown in table 4.1, the value of ATM transactions, POS transactions and electronic mobile banking transactions all follow a consistently upward trend having their highest figures on the most recent year. The chart reveals that ATM significantly dominated electronic payment systems for an extended period. POS transactions and electronic mobile banking transactions started to gain prominence in 2014 but still at a relatively insignificant level compared to ATM transactions. In 2017 and 2018, the value of POS transactions surpassed that of electronic mobile banking. However, in 2019 and 2020, mobile banking transactions exceeded that of POS transactions. On the other hand, ROA seems to exhibit a random trend over time rising and falling periodically and recording negative figures in 2007 and 2009. Ultimately, ROA seems to record higher figures in the later periods of the study timeframe.

The data were analyzed using the Ordinary Least Square (OLS) regression method and the Granger Causality method. The data were tested for stationarity in order to ensure that the regression results are not spurious. The summary of the regression results is shown in table 4.2.

Variables	Differencing	ADF Statistic	Critical Value (5%)	Order of Integration	Remark
ROA	2nd	-8.421767	-3.875302	I(2)	Stationary
VATMT	1st	-5.728626	-3.875302	I(1)	Stationary
VEMBT	Level	3.940930	-3.875302	I(0)	Stationary
VPOST	1st	-7.159811	-3.875302	I(1)	Stationary

Source: *Author's Compilation from Unit Root Test Results, 2022*

As shown in table 4.2, ROA is stationary after second differencing, while VATMT and VPOST is stationary at first differencing. On the other hand, VEMBT is stationary at level. The data were differenced according to their order of integration and used for the regression analysis.

Table 4.3 OLS Regression Results

Dependent Variable: ROA				
Method: Least Squares				
Date: 01/09/22 Time: 07:28				
Sample: 2006 2020				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
VATMT	0.000545	0.000170	3.213477	0.0083
VEMBT	-5.53E-05	0.000204	-0.271354	0.7911
VPOST	-0.000970	0.000485	-2.000132	0.0708
C	-0.278579	0.400848	-0.694974	0.5015
sR-squared	0.573617	Mean **dependent** var		0.786667
Adjusted R-squared	0.457331	S.D. dependent var		1.259380
S.E. of regression	0.927736	Akaike info criterion		2.911039
Sum squared resid	9.467636	Schwarz criterion		3.099853
Log likelihood	-17.83280	Hannan-Quinn criter.		2.909028
F-statistic	4.932800	Durbin-Watson stat		2.152966
Prob(F-statistic)	0.020744			

Source: *Eviews 11.0 OLS Regression Output, 2022*

Table 4.3 reveals that the value of ATM transactions have a positive relationship with return on assets of deposit money banks with a coefficient of 0.00055 and this relationship is significant (prob(t-statistic) = 0.0083). This positive prediction follows that every billion-naira increase in the value of ATM transactions would coincide with a rise of 0.0005% in the value of ROA of deposit money banks in Nigeria. On the other hand, VEMBT and VPOST negatively predict ROA of deposit money banks in Nigeria with regression coefficients of -0.0000553 and -0.000970 respectively. The relationship is however insignificant as the corresponding p-values for both variables are above 0.05.

The R-squared value is 0.573617 which indicates that about 57% of the variation in ROA of deposit money banks are explained by a combination of VATMT, VEMBT and VPOST. The F-statistic value of 4.93 and a probability of 0.020 indicates that the overall relationship between the regressors and ROA is significant. The Durbin-Watson value of 2.15296 is greater than 2 which indicates that the regression is free from auto-correlation problems.

The Granger Causality reveals the direction of causation (effect) among the variables. Tables 4.5, 4.6 and 4.7 reveals that results of the Granger Causality test.

Table 4.5: Granger Causality Test Result for ROA and VATMT

Pairwise Granger Causality Tests			
Date: 01/13/22 Time: 08:21			
Sample: 2006 2020			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
VATMT does not Granger Cause ROA	14	6.32061	0.0443
ROA does not Granger Cause VATMT		5.70889	0.0359

Source: *Eviews 11.0 Granger Causality Test Output, 2022*

The probability value of the F-statistics are both below 0.05 which indicates that both null hypotheses are rejected. Therefore, VATMT causes ROA and ROA causes VATMT. This indicates that there is a bidirectional causality between VATMT and ROA.

Table 4.6: Granger Causality Test Result for ROA and VEMBT

Pairwise Granger Causality Tests
Date: 01/13/22 Time: 08:25
Sample: 2006 2020
Lags: 3

Null Hypothesis:	Obs	F-Statistic	Prob.
VEMBT does not Granger Cause ROA	12	11.5120	0.0060
ROA does not Granger Cause VEMBT		4.43388	0.0713

Source: *Eviews 11.0 Granger Causality Test Output, 2022*

As shown in table 4.6, the probability value for the first hypothesis is below 0.05 while the p-value for the second hypothesis is above 0.05. Therefore, the first null hypothesis is rejected while the second null hypothesis is accepted. This indicates that VEMBT granger causes ROA but ROA does not granger cause VEMBT. Therefore, there is a unidirectional causality flowing from VEMBT to ROA.

Table 4.7: Granger Causality Test Result for ROA and VPOST

Pairwise Granger Causality Tests			
Date: 01/13/22 Time: 08:26			
Sample: 2006 2020			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
VPOST does not Granger Cause ROA	14	6.83886	0.0280
ROA does not Granger Cause VPOST		19.0735	0.0036

Source: *Eviews 11.0 Granger Causality Test Output, 2022*

The probability value of the F-statistics for both hypotheses are both below 0.05 which indicates that both null hypotheses are rejected. Therefore, VPOST causes ROA and ROA causes VPOST. This indicates that there is a bidirectional causality between VPOST and ROA.

The hypotheses of this study were tested using the p-values of the Granger causality test. The decision rule is to accept the null hypothesis of no significant effect if the corresponding p-value is above 0.05 otherwise, the null hypothesis is rejected.

Ho1: Automated teller machine transactions have no significant effect on the operations of deposit money banks in Nigeria

As shown in table 4.5, the corresponding p-value is 0.0443 which is less than 0.05. This indicates a rejection of the null hypothesis. Therefore, Automated teller machine transactions have no significant effect on the operations of deposit money banks in Nigeria.

Ho2: Electronic mobile banking transactions have no significant effect on the operations of deposit money banks in Nigeria.

As shown in table 4.6, the corresponding p-value is 0.0060 which is less than 0.05. This indicates a rejection of the null hypothesis. Therefore, electronic mobile banking transactions have no significant effect on the operations of deposit money banks in Nigeria.

Ho3: Point of sale terminal transactions have no significant effect on the operations of deposit money banks in Nigeria

As shown in table 4.7, the corresponding p-value is 0.0280 which is less than 0.05. This indicates a rejection of the null hypothesis. Therefore, point of sale terminal transactions has no significant effect on the operations of deposit money banks in Nigeria.

In order to reduce the disruptions associated with brick and mortar banking and speed up banking services electronic banking was introduced. Many anticipate that electronic banking improves banking efficiency and gives customers a personal experience. However, there are concerns that electronic banking in Nigeria are bewildered with several problems ranging from poor network service, malfunction, fraud and other errors. This study therefore sought to examine the effect of electronic banking transactions on the operations of deposit money banks in Nigeria. The operation of deposit money bank was expressed in terms of their return on Assets while the selected electronic banking measures were made to include the values of ATM transactions, POS transactions and electronic mobile banking transactions.

Using the ordinary least square regression method, the findings of the study revealed that the value of ATM transactions has positive relationship with return on assets of deposit money banks in Nigeria. The relationship was also found to be significant. The Granger causality test results revealed that the relationship between value of ATM transaction and return on assets of deposit money banks also translates into a bidirectional causation. This indicates that increase in the value of ATM transactions have improved the returns on assets of deposit money banks in Nigeria and in turn, the value of ATM transactions in Nigerian have also improve owing to the improved returns on assets of deposit money banks in Nigeria.

On the other hand, the findings of the study revealed that, the value of POS transactions negatively and

insignificantly predicted the return on assets of deposit money banks in Nigeria. This shows that increase in the value of POS transactions would marginally coincide with reduction in the return on assets of deposit money banks in Nigeria. This finding is in line with the study of Ugwueze and Nwezeaku (2018) who found that POS is not integrated with savings and time deposit but rather demand deposits. Time and savings deposits are one of the major sources of funds available to banks for investment in assets. Therefore, going by the findings of this study and that of Ugwueze and Nwezeaku (2018), increase in the value of POS transactions has led to fall in return on assets of deposit money banks in Nigeria. The Granger causality test results also reveals that this is more than just coincidence as there was found to be causation (effect) flowing from POS to ROA.

The findings of the study also revealed that against priori expectation of the study, the value electronic mobile banking transactions has a negative but insignificant relationship with ROA of deposit money banks in Nigeria. Njeru and Omagwa (2018) also found that electronic mobile transfers do not have significant relationship with profitability of commercial banks. This shows that to a negligible extent, rising trends in the value of electronic mobile banking transactions have coincided with declining trends in return on assets of deposit money banks in Nigeria. The findings of the study also confirmed a unidirectional causality flowed from the value of electronic mobile banking transactions to ROA of deposit money banks in Nigeria. This shows that just as Obiekwe and Anyanwaokoro (2017) found, mobile banking does have effect on the profitability of commercial banks in Nigeria.

Overall, the results of the F-statistics do give credence to the fact that electronic banking does have a significant effect on the operation of deposit money banks in Nigeria. Eze and Egoro (2016) also found an overall significance of the impact of electronic banking on the performance of deposit money banks in Nigeria.

5. CONCLUSION AND RECOMMENDATIONS

The findings of the study point to the conclusion that electronic banking has the potential to affect the operations of deposit money banks but owing to several underlying issues, it has not had the desired effects on the operations of deposit money banks in Nigeria. Specifically, one of the electronic banking outlets that has thrived in Nigeria, the Automated Teller Machine has significantly contributed to the profitability of Banks in Nigeria. However, other outlets such as electronic mobile banking and POS transactions which are only beginning to gain much prominence have not really contributed desirably to the profit performance of deposit money banks in Nigeria. It appears that very often, bank operations are disrupted by having to reverse several transaction errors associated with the use of mobile transfers and POS transactions and this has negatively affected their operations.

In the light of the findings, Deposit money banks must be able to reduce the time taken to reverse wrongful debits, release blocked transactions and other errors associated especially with POS and mobile banking transfers. Banks should ensure that more ATMs are situated and in strategic areas to meet the financial needs of the banking public.

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