

EFFECT OF ELECTRONIC-BANKING TRANSACTIONS ON LIQUIDITY OF THE NIGERIAN BANKING INDUSTRY

¹Okafor Victor Ikechukwu *PhD.* and ²Egiyi Modesta Amaka *PhD.*

¹Department of Accounting, Michael Okpara University of Agriculture, Umudike

²Department of Accounting, Godfrey Okoye University, Enugu

Abstract

The study examines the effect of electronic banking on the liquidity of banks in Nigeria using time series data of 2012 to 2021 which is gotten from the Central Bank of Nigeria's statistical bulletin. The study relied on the Ex-post facto research design. The Ordinary Least Square regression is used to test the hypotheses stated in the study. From the study findings, it is revealed that, automated teller machine transaction has a positive relationship and significant effect on liquidity ratio of banks in Nigeria. Furthermore, it is found that, point of sales transaction has a negative relationship and an insignificant effect on liquidity ratio of banks in Nigeria. Lastly, the study result revealed that, web transactions has a negative relationship and insignificant effect on liquidity ratio of banks in Nigeria. Thus, the study recommends that, the CBN and banks in Nigeria should ensure that regulations are made to sustain liquidity ratio of the banks and to ensure an effective and efficient ATM operation; where bank customers can continuously make financial transactions without hitches. This will further entrench e-banking practice in Nigeria which will help the banks cut cost of operations. Also, more enlightenment should be done by the banks about POS and Web transactions to enable customers patronize alternative transaction channels as this will further improve the effectiveness and efficiency of the banks.

Keywords: *Automated teller machine transaction, point of sales transaction, web transactions and liquidity ratio.*

INTRODUCTION

Electronic banking has been adopted by banks all over the world as a method of efficient financial service delivery as a result of the digitalization of global financial services. When compared to banks operating in developing economies where there is less electronic-banking infrastructure readily available, offering banking services is less of a hassle in developed economies where there is an advanced level of information technology (IT) infrastructures (Mawutor, 2014; Agwu, Atuma, Ikpefan & Aigbiremolen, 2014; Siddik, Sun, Kabiraj, Shanmugan & Yanjuan, 2016). In Nigeria and other developing nations, the effective and efficient adoption of electronic banking in developing nations has been hampered by the lack of IT infrastructure and customer IT skills. All banks in Nigeria now consider the application of IT concepts, processes, strategies, and effective implementation to banking services to be of fundamental relevance and concern, which is necessary for both local and international competitiveness (Olushola, Halidu & Adekunle, 2020). By advancing electronic banking, IT has significantly raised the effective delivery of services in the banking industry (Nwankwo & Agbo, 2021).

The use of Automated Teller Machines (ATMs), Point of Sales (POS), and Web/internet for deposits and withdrawals, as well as other financial operations, is referred

to as electronic banking by Madugba, Egbide, Wozuru, Agburuga, and Onwubiko (2021). According to Abaenewe, Ogbulu, and Ndugbu (2013) and Lasmini, Budiarti, Tasman, and Susant (2019), consumers can now execute financial transactions outside of regular business hours thanks to these electronic banking methods. Thus, to provide better services and enhance the liquidity of the banks, Nigerian banks are increasingly investing in new digitized delivery channels for banking services and products (Nwankwo & Agbo, 2021). Despite the problems already described, Kabir, Kurfi, and Isa (2021) claimed that Nigerian banks are working to offer clients electronic banking services to improve their performance, which is mostly based on the liquidity of the banks as a function of customer transactions.

Existing academic studies have demonstrated how Nigerian banks' adoption of electronic banking affects different performance indicators which liquidity is inclusive (Kabir et al., 2021; Nwankwo & Agbo, 2021; Madugba et al., 2021; Oniore & Okoli, 2019; and Abaenewe et al., 2013). These studies raise concerns about the justification for accepting e-banking technology, which is primarily about service delivery and dependent on enhancing banks' transactions and performance, as they do not reflect the most recent macro data on e-banking and how it affects liquidity of banks. In this regard, Agwu et al. (2014) argued that customers' level of literacy is an impediment to the effective use of electronic banking, which may be seen as an impediment to increasing bank customer transactions because customers who have difficulties using electronic banking system will be unable to make transactions. Despite these issues, Mawutor (2014) claims that electronic banking has increased bank profitability. Furthermore, recent research such as Kabir et al., (2021), Nwankwo and Agbo (2021), and Madugba et al., (2021) have stated that bank consumers are becoming more familiar with electronic banking services since it provides more easy and convenient banking system. Although past studies elucidate the integration of technology into the banking industry which has given birth to the acceptability of electronic banking, they used micro data which is not readily accessible as against macro e-banking data as capture by the Central Bank of Nigeria (CBN). Thus, it is necessary to investigate how electronic banking has affected the liquidity of Nigerian banks using CBN macro data to provide credence to the acceptance/legitimacy of electronic banking technology in the Nigerian environment, notwithstanding the issues it provides.

The main objective of the study is to examine the effect of electronic banking on liquidity of banks in Nigeria. Specifically, the study seeks to;

- i. Assess the effect of automated teller machine (ATM) transactions on liquidity ratio banks in Nigeria.
- ii. Analyze the effect of Point of Sale (POS) transactions on liquidity ratio banks in Nigeria.
- iii. Determine the effect of web transactions on liquidity ratio banks in Nigeria.

There has been a raging argument that the cost of adopting an electronic banking system outweighs the benefits of adopting electronic banking. This study's evidence sets to offer the thinking that, knowledge of the effect of electronic banking on liquidity ratio of banks might contribute to improving liquidity policies of the banks through increased administration of policies by the CBN that will enhance effective and efficient customers transaction. The result of the study will be of benefit to banks in this regard, as it will offer a supporting argument for the need for banks to adopt electronic banking despite the ranging arguments regarding the challenges faced by banks in the effective use of electronic banking systems.

REVIEW OF LITERATURE

Concept of Electronic Banking

Electronic banking has been characterized in numerous ways. Abubakar et al., (2015), for example, defines electronic banking as provision of a variety of financial services outside the banking hall using electronic and mobile platforms. According to Nwankwo and Agbo (2021), electronic banking refers to making available information about the bank and its products via an internet platform. Furthermore, Aduda and Kingoo (2012) consider that electronic banking utilizes the internet as a delivery route for financial activities. The use of electronic and telecom networks to deliver a wide range of value-added products and services to bank customers is known as electronic banking. Abaenewa et al., (2013) specifies e - banking as the use of computers and telecommunications to conduct banking transactions rather than human interaction. According to Kabir et al., (2021), electronic banking encompasses all forms of banking activities carried out over an electronic network. It is the most recent banking service delivery channel, and it is utilized for both business-to-business and biz transactions. To Lasmini et al., (2019), electronic banking is an umbrella word for the procedure through which a customer executes financial transactions digitally without visiting a physical location. In this study, the concept of e-banking refers to the electronic channels through which bank transactions are facilitated by customers and the bank. In line with the concept of e-banking explained by Kabir et al., (2021), Nwankwo and Agbo (2021), Madugba et al., (2021), Oniore and Okoli (2019), the study's concept of e-banking transactions is framed on automated teller machine transactions, point of sales transactions and web facilitated transactions.

In terms of liquidity, the study's concept of liquidity is framed based on the liquidity ratio of the banks. This is to enable the study to measure liquidity using macro level data that is equally available as those of e-banking transactions as against micro level data used by authors like Olushola et al., (2020), Lasmini et al., (2019), Saluja and Wadje (2015) which is not readily available in the context of Nigeria. Liquidity is critical for a company to be able to fulfill its responsibilities on time. Liquidity ratios assess a bank's ability to meet its short-term obligations.

A company should make certain that it does not suffer from a lack of liquidity and that it does not have an excess of liquidity. Failure of a firm to satisfy its obligations owing to a lack of adequate liquidity would result in bad creditworthiness, loss of creditors' faith, and even court wranglings, which may result in the company's liquidation. Furthermore, excessive liquidity is negative since idle funds are unnecessarily tied up in liquid liability generating nothing. As a result, a healthy balance between excessive liquidity and liquidity crunch is required (Abaenewe et al., 2013). Furthermore, liquidity is a company's capacity to satisfy its short-term obligations (Nwankwo & Agbo, 2021). According to the Global Association of Risk Specialists (2013), liquidity is a bank's ability to support asset growth while also meeting both foreseen and unanticipated cash and collateral requirements at a fair cost and without suffering unacceptable losses. According to Olushola Halidu and Adekunle (2020), liquidity in banking gauges cash availability and the pace at which liquid assets are transformed into cash to meet routine and extraordinary requests. Similarly, Mawutor (2014) define bank liquidity as the bank's ability to keep adequate funds on hand to cover its maturing liabilities.

Theoretical Framework

The study theoretical framework is built on the innovation theory of profit/entrepreneurship propounded by Schumpeter in 1939. Schumpeter idea is quite similar to J.B Clark's Dynamic theory of profit. The innovation theory of profit otherwise known as the innovation theory of business performance, explains the change induced by improvements in the business processes. Efficient business performance according to Schumpeter (1939) is the reward for innovation. These innovations refers to all changes made in the process of transactions with the goal of lowering product costs, creating a more effective means to carry out transactions between business and customers, and customers to customers. In this regards Schumpeter (1939) argues that, innovation can take many forms, such as the introduction of a new technology or a new product, a change in the firm's internal structure or organizational set up, and a change in the quality of equipment used for business. This is to ensure that new technologies are used as competitive advantage in ensuring efficient business performance.

In this study, the innovation theory of profit is concerned with the use of technology in the advancement of financial services by the banking sector in order to maintain efficient liquidity by the banks where money is easily accessible by customers at least cost. In line with Schumpeter (1939) theory of innovation, the study relies on ATM, POS, and web banking transactions as innovations for banking transactions that are capable of increasing customers' transactions and consequently enhancing efficient liquidity ratio in the banking sector. Notwithstanding, scholars like, Abaenewa et al., (2013), Mawutor (2014), Ugwueze and Nwezeaku (2016), and Nwankwo and Agbo (2021) have contended given mixed evidence of their research about the relevance of e-banking (ATM, POS, and web banking) technology for the improved performance of banks. Thus, it has become necessary to apply innovation theory of profit in this study.

Empirical Review

Scholarly works on the effect of e-banking by banks has been done at a global level. These studies are reviewed in this section.

Kabir et al., (2021) investigated the impact of electronic banking on the financial performance of Nigerian banks in a study. They used a descriptive method to collect data from 21 publicly traded commercial banks, and the data was evaluated using a multi-linear regression model. Their research discovered that mobile banking, online banking, and the use of ATM cards have a positive and considerable impact on the return on assets of Nigerian commercial banks. Although their study captured three major e-banking proxies, they failed to consider time variance in the adoption of e-banking which might have been the case with the banks. Thus, a panel regression analysis would have been more appropriate to explain the fixed effect (time variance) in the data that might have influenced the outcome of the result.

Nwankwo and Agbo (2021) looked into the effects of electronic banking on Nigerian commercial bank performance. They employed a quantitative research strategy and ordinary least squares regression to analyze the data from 2013 to 2017. According to the findings of their research, automated teller machine transactions have a positive and significant effect on the profitability of commercial banks in Nigeria, whereas the point of sale terminal transactions and mobile banking transactions have a negative and weak effect on the performance of commercial banks in Nigeria. This study represents the potential

reality in Nigeria since clients are more knowledgeable regarding the use of ATMs than some other e-banking methods.

The impact of electronic banking on the financial performance of Nigerian commercial banks was also examined by Madugba et al., (2021). They used the ex-post facto approach. In addition, ordinary least square modeling was utilized to test their research hypotheses. They discovered that automated teller machine transactions have a favourable and significant link with banks' earnings per share and return on assets. Furthermore, point-of-sale transactions have a considerable impact on return on assets, whereas web banking has little impact on earnings per share or return on assets. The major weakness of their research is in measuring e-banking against earnings per share as no known theory explains such a relationship at the moment. It is thus pertinent to point out that, studies of e-banking should be measured against net income.

Olushola et al. (2020) investigated the impact of electronic banking on Nigerian bank performance. Their study made use of secondary data from banks, which was examined utilizing a multiple regression approach. It was discovered that e-banking has no substantial impact on the performance of Nigerian banks as evaluated by returns on equity, returns on assets, and per-share earnings. The study by Olushola et al., (2020) did not rightly capture e-banking methods as measured by other leading scholars. This shows a conceptualization gap that needs to be revisited. This is similar to the study conducted by Lasmini et al., (2019), who investigated the association between the use of e-banking and the financial performance of Indonesian major public banks. Their research was based on information from 41 financial institutions. They examined e-banking using a dummy of internet banking and mobile banking practices of banks, and the data collected for the study were analyzed using a partial correlation matrix. Their findings demonstrated that online banking is positively and significantly connected with bank financial performance, whereas mobile banking is positively but not strongly associated with the financial performance of Indonesian going public banks. There is evidence that shows e-banking can be measured by the value of transactions done through e-banking channels. These studies have failed to capture these figures which pertain to the measurement of e-banking.

In their study, Oniore and Okoli (2019) used time series quarterly data from 2006 to 2017 to analyze the influence of electronic banking on the performance of Nigerian money deposit institutions. In evaluating their study data, they used the ordinary least squares regression approach. They discovered that, in the long run, all variables are correlated, except for interbank transfer, which is inversely associated with bank performance in terms of return on assets and return on equity. The estimation model used by Oniore and Okoli (2019) is faulted on the premise that e-banking data for banks are macro data and the performance index used as ROA and ROE are micro data. Thus, the combination of macro and micro data poses a concern in terms drawing a logical conclusion.

Saluja and Wadje (2015) evaluated the profitability impact of e-banking. Their research was based on data from 31 publicly traded Indian commercial banks. Using multiple linear regression, they show that e-banking has a favourable effect on bank profitability in India. The study done by Saluja and Wadje (2015) used pooled data from the banks and measured e-banking as the number of ATMs and the number of branches. This measurement is faulted on the basis that, there could be available figures in the bank's annual report that specifies the amount of monetary value for transactions done through e-banking channels and is deemed more suitable for measuring e-banking transactions. It

then means the measurement used by Saluja and Wadje (2015) needs to be revisited to strengthen the weakness in their measurement.

Abubakar, Shagari, and Olusegun (2015) used time series data from 2006 to 2014 to investigate the relationship between electronic banking and deposit money bank liquidity in Nigeria. To describe the data set and find the link between electronic banking, proxies by internet banking, mobile banking, and point of sale, and liquidity, proxies by current ratio, descriptive and correlation analyses were used. The correlation study results show that mobile banking and point of sale have no significant link with liquidity, however online banking has a substantial negative relationship with liquidity.

Aduda and Kingoo (2012) conducted research on the association between electronic banking and financial performance in Kenyan commercial banks. The results show that there is a positive association between e-banking and bank performance when using return on assets as a proxy for financial success and investment in e-banking, number of ATMs, and number of debit cards given to consumers as surrogates for e-banking. Malhotra and Singh (2009) used a multiple regression technique to examine the influence of internet banking on bank performance and risk in India. The findings show that there is no substantial relationship between internet banking and profitability on the one hand, and a significant negative relationship between internet banking and the risk profile of Indian banks on the other.

There are enough studies done on the effect of e-banking on the performance of banks. These studies cut across those done in Nigeria and the ones that are done outside Nigeria. Regardless of the empirical review of these studies, there seems to be a gap in the model used by previous authors and a timeframe gap since there are very few or no studies done in 2022 and above. For example, Kabir et al., (2021), Nwankwo and Agbo (2021), Madugba et al., (2021), and Oniore and Okoli (2019) all examined the effect of e-banking on the financial performance of listed commercial banks in Nigeria using either ATM transactions, point of sales transactions, or web banking transactions against financial performance measures but their studies failed to capture data beyond 2020. This enables a timeframe gap that needs to be re-evaluated because maybe in the frame of 2 years, a lot has changed that might alter past evidence and it needs to be studied. Also, these studies used micro level data that are not assessable in the annual reports of the banks. It is more reliable to use the macro level data available on the CBN data base which in this regard, the much available data for performance of the banks pertains to the macro liquidity ratio of the banks.

Thus, the current study will adapt the models used by Kabir et al., (2021), Nwankwo and Agbo (2021), Madugba et al., (2021), Oniore and Okoli (2019), Abubakar et al., (2015) and use the recent e-banking macro data of banks to bridge both the methodological and timeframe gaps that exist in previous studies.

METHOD

The ex-post facto research design is used in this study. The ex-post facto research design is appropriate for usage when the data to be analyzed is quantifiable, already exists, and cannot be manipulated by the research. Ex-post facto research designs enable current causalities to be deduced from past events and data.

The study adopts the multiple (ordinary least square regression) model. This is because the study's independent variable is broken into three (automated teller

transactions, point of sales transactions, and web transactions), which is measured against the liquidity ratio of banks in a single model.

The study equation is expressed in the econometric form as;

$$LIQR_t = \alpha + \beta_1 ATM_t + \beta_2 POS_t + \beta_3 WEB_t + U_{it} \dots \dots \dots \text{Model 1}$$

Dependent Variable:

LIQR = Liquidity ratio (the obligation of banks to maintain a certain percentage of deposit to cater for the liabilities of the banks in terms of withdrawers and other short term demands).

Independent variable:

ATM = Automated teller machine transactions (the amount of money reported by CBN as transactions via automated teller machine by customers of the banks in a year)

POS = point of sale transactions (the amount of money reported by CBN as transactions via point of sales by customers of the banks in a year).

WEB = Web transactions (the amount of money reported by CBN as transactions via web/internet by customers of banks in a year).

$\beta_1 - \beta_3$ = Beta coefficient of the model

t = time series element of the model

U = Error term

To carry out the regression estimation test using Stata 13, the study employs the; Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, Breusch-Godfrey LM test for autocorrelation correlation, the variance inflation factor (VIF) for multi-collinearity, and the Fisher-statistics test for model fitness. Furthermore, the study used the OLS model to run a multiple regression for test of significance. Finally, while the R-square measures the level at the independent variable that can cause liquidity to change, the probability of the Tau statistics (t-statistics) is used to test each hypothesis specified.

The decision rule is to accept the null hypothesis if the calculated probability value is greater than the accepted probability value of 0.05.

DATA ANALYSIS

Descriptive Analysis

The descriptive statistics for both the dependent and independent variables of interest is done in this section. Each variable is examined based on the mean, standard deviation, maximum and minimum values. The table below displays the descriptive statistics for the study.

Table 1: Descriptive Statistics Table

Variable	Qbs	Mean	Std. Dev.	Min	Max
LIQR	10	58.662	18.95901	38.32	104.2
ATM	10	8.87e+12	8.09e+12	1.98e+12	2.51e+13
POS	10	3.60e+12	7.42e+12	4.85e+10	2.45e+13
WEB	10	7.82e+13	1.80e+14	3.16e+10	5.45e+14

Source: STATA output

The study observed data for e-banking and liquidity ratio of banks in Nigeria for 10 years as shown in the Obs statistics which represents the study number of observation.

For data on macro liquidity ratio (LIQR) of banks, the descriptive statistics reveal a mean value of 58.662 with a deviation of 18.95901. The result further reveals minimum and maximum values of 38.32 and 104.2 respectively. The level of deviation shown in the data for LIQR reveals the level of fluctuation in liquidity ratio; which might be as a result of e-banking transactions and other government financial policies.

The study finds that Automated Teller Machine (ATM) transaction has a mean of 887 billion Naira and a standard deviation of 809 billion Naira. This implies that on the average, the banking sector in Nigeria record about 809 billion decrease or increase in customer transaction owing to ATM regulations. The minimum and maximum values for ATM are 198 billion Naira and 2.51 trillion Naira respectively.

In terms of Point of Sales transactions (POS), the study finds that, POS transactions has a mean value of 360 billion Naira and the standard deviation is 742 billion Naira. Also, POS has a minimum and maximum values of 485 billion Naira and 2.45 trillion Naira respectively.

Furthermore, Nigerian banks’ data show a mean record of 782 billion Naira for WEB transaction which is inclusive of internet transaction. The banks also record a standard deviation value of 18 trillion naira. Lastly, the banking industry records a minimum and maximum values of approximately 316 billion Naira and 54.5 Trillion Naira respectively. The high level of fluctuation shown by data proves that in the past when internet and web service were not mostly used by customers, there were low records of web transaction but this has greatly improved in recent times.

Diagnostic Tests

A number of tests are carried out to ascertain if the data used in this study meets the requirements of the regression technique. They include, data normality test and pre-estimation tests for regression.

Data Normality Test:

To test for the level of disparity between the data sect which might disrupt the outcome of the result or to ascertain the fitness of the data used for the study, the probability of Kurtosis test as data normality test is employed.

Table 2: Data Normality Test Table

Variable	Obs	LIQR	ATM	POS	WEB
Prob > chi2	11	0.0226 (0.0226)	0.099(0.6518)	0.002(0.9059)	0.0020(0.07)

Source: STATA Output

The data normality test table revealed kurtosis probability values for; LIQR, ATM, POS, and WEB as 0.0226, 0.099, 0.002, and 0.0020. The normality values are first, tested in their absolute state which showed that data for LIQR, POS, and WEB are not normalized with their kurtosis probability values less than 0.05. To correct this, the study logged the values for ATM, POS, and WEB to see if the normality/stationarity can be corrected with their respective test outcomes placed in the brackets. After taking the natural logs of ATM, POS, and WEB; the data set for all the variables reveal probability values that are above 0.05 which depicts normality when logged. The study could not log the values for LIQR since they are in their ratio forms.

Regression Estimation Test:

Four tests are carried out to determine the presence or absence of heteroskedasticity, autocorrelation, multicollinearity, and overall model fitness of the

variables used in this study. They are; Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, Breusch-Godfrey LM test for autocorrelation correlation, the variance inflation factor (VIF), and the Fisher-statistics test. The results are presented below.

Table 3: Regression Estimation Test Table

	B-Pagan	B-Godfrey	VIF	F.Stat
ACP	0.2323	0.7899	5.74	0.0300

Source: STATA Output

All the variables show a low multicollinearity issue at an acceptable mean VIF value of $5.74 < 10$. The Breusch-Pagan (B-Pagan) test reveal a statistic of $0.2323 > 0.05$ which depicts that the model is free from heteroskedasticity issues. Furthermore, the B-Godfrey test reveal a statistic of $0.7899 > 0.05$ which shows that, the model is free from autocorrelation issues. Finally, the F.Stat value of 0.0300 revealed shows that, the model as a whole is statistically fit and can translate valid results for analysis.

Estimated Model Summaries:

In this model, the study relied on the subsisting result in regression estimation test to ascertain the extent to which e-banking transactions have affected the liquidity ratio of banks in Nigeria. An OLS regression is done using the macro data on ATM, POS, and WEB transactions against the macro liquidity ratio of banks in Nigeria. The estimation regression result is presented below.

Table 4: Model Summary

R-squared = 0.7522 Adj R-squared = 0.6283

LIQR	Coef.	t	P> t
LOGATM	96.35237	3.66	0.011
LOGPOS	-27.63866	-1.93	0.101
LOGWEB	-2.192204	-0.50	0.633
_cons	-818.1293	-3.87	0.008

Source: STATA output

The model summary table above, presents the regression result between LOG values of ATM, POS and WEB against LIQR. From the model summary table above, the following information can be distilled.

The R^2 which measures the level of variation of the dependent variable (LIQR) caused by the independent variables (ATM, POS & WEB) stood at 0.7522. The R^2 otherwise known as the coefficient of determination shows the percentage of the total variation of the liquidity ratio of banks can be explained by collective changes in ATM, POS and WEB transactions. Thus, the R^2 value of approximately 0.752 indicates that 75.2% of the variation in the liquidity ratio of the Nigerian banking sector can be explained by a variation in e-banking (ATM, POS, & WEB) while the remaining 24.8% (i.e. $100 - R^2$) could be accounted by other financial policies not included in this model like financial deepening measures.

The regression results as presented above to determine shows that, when the independent variables are held stationary or without the variable intercept model (Constant); the LIQR variable is estimated at -818.1293. This simply implies that when all independent variables are held constant, there will be decrease in liquidity ratio of Nigerian banking sector up to the tune of 888.1293 units occasioned by factors not incorporated in this study. Thus, a unit variation in ATM will lead to increase in LIQR by 96.35237 units, also this increase is significant as the p-value of $0.011 < 0.05$. A unit change in POS will lead to a decrease in LIQR by 27.63866 units but this change is also not significant as the associated

p-value of 0.101 is greater than the accepted 0.05 p-value. Lastly, LIQR will decrease by 2.192204 units should WEB transaction is varied by a unit but this decrease too is not significant because the associated p-value is $0.633 > 0.05$.

Test of Hypotheses

The hypotheses earlier stated in this study is tested in this section, in line with the study stated decision rule of the study.

H₀₁: Automated teller machine transactions has no significant effect on liquidity ratio of banks in Nigeria.

The study regression test reveals a p-value of $0.011 < 0.05$ for ATM against LIQR. This means that, the null hypothesis is rejected while the alternative is accepted. Therefore, automated teller machine transaction has a significant effect on liquidity ratio of banks in Nigeria.

H₀₂: Point of sales transactions has no significant effect on liquidity ratio of banks in Nigeria.

The study regression test reveals a p-value of $0.101 > 0.05$ for POS against LIQR. This means that, the null hypothesis is accepted while the alternative is rejected. Therefore, point of sales transaction has no significant effect on liquidity ratio of banks in Nigeria.

H₀₃: Point of sales transactions has no significant effect on liquidity ratio of banks in Nigeria.

The regression test reveals a p-value of $0.633 > 0.05$ for WEB against LIQR. This means that, the null hypothesis is accepted while the alternative is rejected. Therefore, web transaction has no significant effect on liquidity ratio of banks in Nigeria.

DISCUSSION OF RESULT

The study provides evidence that, ATM transactions are more facilitated by customers of banks in Nigeria than POS and WEB transactions. This is owing to the study findings that ATM transactions has a positive significant effect of liquidity ratio of banks in Nigeria as against POS and WEB transaction. This might be as a result of customers familiarity with the ATM compared to POS and WEB transactions. A similar argument is posited by Abubakar et al., (2015); and Nwakwo and Agbo (2021) who carried out a study in Nigeria on e-banking transactions and performance of commercial banks in Nigeria. The study findings has implication for testing the innovation theory of profit proposed by influencing Schumpeter (1939) Wherein it is noted that innovations in technologies are meant to increase or facilitate transactions and enhance efficiency in meeting liquidity targets of banks. The implication is that, customers of banks in Nigeria have shown a form of restrain to use of POS and WEB transactions. This might be due to ill perceptions and interpretive factors which are not quantitatively captured in this study.

CONCLUSION/RECOMMENDATION

From the findings established, the study concludes that, ATM transaction contribute to significant increase in the liquidity ratio of Nigerian banking industry while POS and WEB transactions have no significant effect on liquidity ratio of banks in Nigeria.

Based on the conclusion, the study recommends that, the CBN and banks in Nigeria should ensure that regulations are made to sustain liquidity ratio of the banks and to ensure an effective and efficient ATM operation; where bank customers can continuously make

financial transactions without hitches. This will further entrench e-banking practice in Nigeria which will help the banks cut cost of operations. Also, more enlightenment should be done by the banks about POS and Web transactions to enable customers patronize alternative transaction channels as this will further improve the effectiveness and efficiency of the banks.

REFERENCE

- Abaenewe, Z., Ogbulu, O. & Ndugbu, M. (2013). Electronic banking and bank performance in Nigeria. *West African Journal of Industrial & Academic Research*, 6(1), 171-188.
- Aduda, J. & Kingoo, N. (2012). The relationship between electronic banking and financial performance among commercial banks in Kenya. *Journal of Finance and Investment Analysis*, 1(3), 99- 118.
- Agwu, P., Atuma, O., Ikpefan, O. & Aigbiremolen, M. (2014). Impediments to E-Banking services marketing in developing economies: A case study of Nigerian banks. *European Journal of Business and Social Sciences*, 3(3), 228-248.
- Abubakar A., Shagari, J. & Olusegun, K. (2015). The relationship between electronic banking and liquidity of deposit money banks in Nigeria. *International Journal of Economics, Commerce and Management*, 3(9), 330-344.
- Kabir, N., Kurfi, S. & Isa, M. (2021). The impact of electronic banking on the financial performance of Nigerian deposits money banks. *UMYU Journal of Accounting and Finance Research*, 1(1), 19-39.
- Lasmini, R., Budiarti, B., Tasman, A. & Susant, F. (2019). The relationship between e-banking and financial performance of go public bank in Indonesia. 4th Padang International Conference on Education, Economics, Business and Accounting (PICEEBA-2 2019).
- Madugba, J., Egbide, B., Wozuru, J., Agburuga, U. & Onwubiko, O. (2021). Effect of electronic banking on financial performance of deposit money banks in Nigeria. *Banks and Bank Systems*, 16(3), 71-83.
- Mawutor, J. (2014). Impact of E-Banking on the Profitability of Banks in Ghana. *Research Journal of Finance and Accounting*, 5(22), 23-36.
- Nwankwo S. & Agbo, E. (2021). Effect of electronic banking on commercial bank performance in Nigeria. *European Journal of Accounting Finance and Investment*, 7(1), 64-79.
- Olushola A., Halidu, A. & Adegunle, H. (2020). The effect of electronic banking on bank performance in Nigeria. *European Journal of Business and Management*, 12(26), 78-87.
- Oniore, J. & Okoli, U. (2019) Impact of electronic banking on the performance of money deposit banks in Nigeria. *Noble International Journal of Economics and Financial Research*, 04 (09), 83-90.
- Onyedimekwu, O. & Oruan, M. (2013). Empirical evaluation of customers' use of electronic banking systems in Nigeria. *African Journal of Computing & ICT*, 6(1), 28-37.

- Saluja, S. & Wadje, T. (2015). Impact of e- banking on profitability of commercial banks in India. *International Journal in Management and Social Science*, 3(2), 478-484.
- Schumpeter, J. (1939). *Business Cycles: A Theoretical Historical and Statistical Analysis of the Capitalist Process*. New York: McGraw-Hill
- Siddik, N., Sun, G., Kabiraj, S., Shanmugan, J. & Yanjuan, C. (2016). Impacts of e-banking on performance of banks in a developing economy: Empirical evidence from Bangladesh. *Journal of Business Economics and Management*, 17(6), 1066–1080.
- Ugwueze, A. & Nwezeaku, N. (2016). E-Banking and commercial bank performance in Nigeria: A cointegration and causality approach. *International Journal of e-Education, e-Business, e-Management and e-Learning*, doi: 10.17706/ijeeee.2016.6.3.175-185.