

# Effect of Electronic Banking on Small and Medium Scale Enterprise in Nigeria

<sup>1</sup>Chidi L Atueyi, <sup>2</sup>Prof. Gabriel C. Nkechukwu. <sup>3</sup>Prof. Samuel M. Nzotta, <sup>4</sup>Chineze J. Jacobs, Ph.D

<sup>1</sup> & <sup>2</sup>Department of Banking and Finance, Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State Nigeria

<sup>3</sup>Department of Banking and Finance, Federal University of Technology, Owerri

<sup>4</sup>Department of Entrepreneurship Studies Chukwuemeka Odumegwu Ojukwu University, Igbariam, Anambra State Nigeria

**Abstract:** This study investigated the effect of electronic banking and performance of Small and Medium Scale Enterprises (SMSE) in Nigeria between the periods of 1981-2018. The data used were resourced from Central Bank of Nigeria (CBN) Statistical Bulletin 2018. The variables were the performance of small and medium scale enterprises as the dependent variable, while Automated Teller Machine (ATM), Point of Sales (POS) and Mobility of Payment (MOP) as the independent variables. The study employed unit root test, to determine the stationarity of the variables, co-integration approach to determine the long run equilibrium relationship of the variables and Error Correction Model (ECM) to determine the speed of adjustment. Ordinary Least Square (OLS) method of data analysis was adopted. From the model it was concluded that electronic banking has a positive significant effect on the performance of small and medium scale enterprises. The study found that point of sales has positive significant effect on the performance of Small and Medium Scale Enterprises (SMSE) in Nigeria, Automated Teller Machine (ATM) has positive significant effect on the performance of Small and Medium Scale Enterprises (SMSE) in Nigeria. The study recommends that the number of Automated Teller Machines (ATM) should be increased especially in the unbanked rural areas to ensure their financial inclusion and financial accessibility. The number of outlets offering point of sale (POS) device should be increased to support their economic activities.

**Key words:** Small and medium scale enterprises, Mobility of payment, Automated teller machine, Point of sales, Electronic banking, co-integration, unit root test, error correction model

## INTRODUCTION

Mbah & Obiezekwem (2019) maintained that recently countries at all levels of development, small and medium scale enterprises (SMEs) have a crucial role to play in achieving the sustainable development goals, by promoting inclusive development and sustainable economic expansion, providing employment, price stability, promoting

sustainable industrialization, fostering innovation, creating values and reducing income inequalities. In developing nations, sustainable economic growth is full employment. Thus, the interest in SMEs should be higher in developing countries due to high level of poverty and flexibility of SMEs as compared to other investment. The important role played by Small and medium enterprises (SMEs) as catalysts for overall economic performance is widely accepted and documented (Ngek, 2014). According to the World Bank (2016), SMEs play a pivotal role towards sustainable development. Hence, the strategy to focus on supporting SMEs will uplift the economies of developing including Nigeria (Ayandibu & Houghton, 2017).

According to World Bank (2012), the inability of the SMEs to access funds is still a major problems that limits the formation of new businesses and prevents others from expanding and growing. Lennart and Bjorn (2010) opinion that cash-flow management is key bottlenecks for micro and small enterprises operations. This assertion were in line with what Booster et al (2008) who established that debt collection, lack of working capital and low sales are among the top five challenges facing micro and small businesses. These challenges make SMEs lack financial capacity to enlarge, develop and expand. According to Atieno (2009), most formal financial institutions consider SMEs as uncredit worthy, thus denying them credit facilities. This lack of access to financial resources has been seen as one of the reasons for the slow growth of SMEs in Nigeria. This is coupled with negative perception towards them, which adversely affect their ability to access financial services provided by financial institutions. This is because they are considered not viable customers by the formal financial sectors as their transaction sizes are small. Their accessibility to financial institutions is difficult due to low capital base, poor returns, lack of financial records and collateral property to secure loans from banks and this in turn affects their development (Amyx, 2005). E-banking could improve process excellence, speed of delivery and value of service to customers. Though the success of e-banking services depend on the rate at which the technology is adopted by customers, small and medium scale enterprises inclusive, the question is, how the adoption of e-banking channels by SMEs has influenced their performance.

## **LITERATURE REVIEW**

Electronic banking can be defined as the automated, smooth and efficient delivery of modern and traditional banking services through electronic and communicative channels. It includes the systems that customers use to access accounts, transact businesses and obtain information through networks, including the internet. These networks could be private or public. Electronic banking is, therefore, a general term describing the whole process of performing such transactions without the need to physically visit the financial institution Kiragu (2017). Electronic banking (E-banking) is an umbrella term for the process by which customer may perform banking transactions electronically without visiting a brick and mortar bank. It is the delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channel (Imiefo & Pedro, 2012). An electronic banking is also defined as business services that utilize information and communication technology including an integrated circuit (IC), cards, cryptography, and a telecommunication network (Edisiri & Promise, 2013).

Addae-Korankye (2014) describes electronic banking as a variety of the following platforms: online banking, telephone banking, T.V. based banking, mobile phone banking,

and PC banking.. Electronic banking is the use of electronic and telecommunication networks to deliver a wide range of value added products and services to bank customers (Steven, 2002). Okoro (2014) defines electronic banking as the use of computers and telecommunication to carry out banking transactions instead of human interactions- banking means a system through which financial service providers, customers, individuals and businesses are able to access their accounts, do transactions and obtain latest information on financial products and services from public or private networks, such as the internet. For example, using intelligent devices such as personal computer, automated teller machines (ATMs) and personal digital assistant (PDA), customers access-banking services and do their transactions with less effort as compared to the branch based banking. The term e-banking can be explained in different way from different perspectives. Nonetheless, researchers across the world have made extensive efforts to provide a precise and all-inclusive concept of e-banking in their various concepts.. Technology Acceptance Theory (TAT) was propounded by Davis, Bagozzi, and Warshaw (1989) to explain the user's acceptance and intention in the use of technology. The perceived usefulness of a technology is the belief by the user that the technology will improve his or her on job performance. The perceived ease of use looks at how easily the user can learn to use the new system or the technology (Gefen et al., 2003). According to the model, if the new technology ease of use is achieved it is likely to positively lead to perceived usefulness. The study considered TAT factors, faith, perceived risk and public experiences. The findings of the study showed that the public trusted the government and resonated with information technology. The empirical study further revealed that TAT is not only useful for examination of information technology but it also useful in examining the acceptance of intention behavior related to information technology and further explains the behavior issues faced by online users of technology (Liu and Arnett, 2000; Gefen et al., 2003).

Ravas (2016) analyzed the role of mobile banking on the growth of micro and small enterprises in kitui county using chi-square method. This study achieved its objective and obtained detailed information arising from the role of Mobile banking on the growth of MSEs.

Masocha & Dzomonda (2018) studied the adoption of mobile money services and the subsequent performance of Small and Medium Enterprises (SMEs) in Zimbabwe. This contribution used the quantitative research method with a descriptive research design. The results indicated that benefits of mobile money and challenges in traditional financial services influenced firm adoption of mobile money services. Conclusively, the study established that subsequent adoption of mobile money services has an influence on the performance of SMEs.

Mbah & Obiezekwem (2019) studied relationship between electronic banking and performance of small and medium scale enterprises in Anambra state; Regression analysis was used to test the hypotheses of the study. Study results concluded that there is positive relationship between; automated teller machine, point of sale services, transaction alerts via short message services (SMS), mobile banking and performance of SMEs in Anambra State.

Ngaruiya, Bosire, & Kamau, (2014) Studied the effect of mobile money transactions on financial performance of Small and Medium enterprises in Nakuru town Central business district (CBD).. The results of the study indicated that mobile money transactions have a significant effect on sales revenue.

Iravonga & Miroga, (2018) analysed Effect of mobile banking on financial performance of small scale and medium enterprises in Kakamega County. The findings revealed that SMEs used mobile banking services to send and receive money, check account balance, knowing when to deposit or withdrawal from their bank account.

Taiwo & Agwu, (2017) investigated the roles e-banking adoption has played in the performance of organizations using a case study of commercial banks in Nigeria. It was concluded that the introduction of new channels into their e-banking operations drastically increased bank performances, since the more active customers are with their electronic transactions the more profitable it is for the banks.

Mukuria (2014) studied the effect of banking services on the profitability of the top 100 Small and medium enterprises in Kenya. The study findings indicated that that the value of SMEs' assets, debt-equity ratio, monthly average savings and SME training had an effect on the profitability (ROA) of the SMEs while the amount of loan given to SMEs had no effect on the profitability of the Top 100 SMEs in Kenya.

Muchiri (2018) determined the magnitude to which small and medium enterprises have adopted mobile banking in Nairobi County. The study also revealed that mobile banking has increased customer base because of easy method of payments, more time to carry out other business activities, easy access to funds in the bank, increased business transactions, increased profits and increased business efficiency.

Okeke, (2017) investigated the effect of cashless policy on development of small and medium scale enterprises in Anambra state. The result of the study indicate that Automated teller machine has a significant effect on the development of small and medium scale enterprises in Anambra state Point of sale has no influence on the development of Small and medium scale enterprises in Anambra state.

## **METHODOLOGY**

In line with the objective of this study, the effect of electronic banking on the performance of small and medium scale enterprises is represented in equation below. The function indicates that electronic banking can have positive effect on performance of small and medium scale enterprises. This postulation was adapted from the models as used in previous studies such as in (Mbah & Obiezekwem (2019) who studied the Electronic Banking and Performance of Small and Medium Scale Enterprises in Anambra State, Nigeria

. The following are the variable.

PSMSE = f(TASMS, ATM, MB, POS) representing Performance of small and medium scale enterprises, Transaction Alerts Via SMS, Automated Teller Machine, Mobile Banking and Point of Sale

Then the model is modified as

PSMSE = f(POS, ATM, MOP) Equation

Where:

PSMSE = Performance of small and medium scale enterprises

POS= Point of sales

ATM= Automated teller machine

MOP = Mobility of payment

The relationship can be explicitly formulated into an econometric equation thus:  
 $PSMSE = f C_0 + C_1 POS + C_2 ATM + C_3 MOP + p$  Equation

Where  $C_0$  is a constant or intercept,  $c_1$ ,  $c_2$  and  $c_3$ , are the coefficients of the explanatory variables,  $p$  is stochastic error term

**DATA ANALYSIS**

The method used was the Ordinary Least Square (OLS) regression technique, this method was chosen over others because of its “BLUE” properties “Best Linear unbiased Estimates, it is also efficient and consistent, When compared with other linear unbiased estimator.

**Table 1 Unit Root Test**

variables	ADF	Integration	%
LATM	-5657816	I(1)	1%
LPOS	-8.493779	I(1)	1%
LMOP	-9.684929	I(1)	1%

The result of unit root test shows that all the variables were stationary at first difference.

**Co-Integration Test**

Granger states that for one to avoid spurious regression situation, there is need for Co-integration analysis. To conduct co-integration test, this study uses the method developed by Johansen and Juselius. The Johansen-Juselius test gives better results and test co integration by applying maximum like Likelihood estimation procedure.

**Table 2. Johansson Co-integration Test Result for Electronic Banking Equation**

Date: 12/15/19 Time: 01:57				
Sample (adjusted): 1984 2018				
Included observations: 35 after adjustments				
Trend assumption: Linear deterministic trend				
Series: LPSME LPOS LATM LMOP				
Lags interval (in first differences): 1 to 2				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized				
No. of CE(s)		Eigenvalue	Trace Statistic	0.05
			Critical Value	Prob.**
None *		0.563509	52.68599	47.85613
At most 1		0.327070	23.67143	29.79707
At most 2		0.218209	9.807431	15.49471
At most 3		0.033471	1.191555	3.841466
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.563509	29.01456	27.58434	0.0326
At most 1	0.327070	13.86400	21.13162	0.3763
At most 2	0.218209	8.615877	14.26460	0.3195
At most 3	0.033471	1.191555	3.841466	0.2750
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Johansson co-integration result shows that there is long-run equilibrium relationship between the dependent and independent variables.

**Presentation of the Regression Result**

**Table 3 Error Correction Model result for Electronic Banking Equation**

Dependent Variable: LPSME  
 Method: Least Squares  
 Date: 12/15/19 Time: 02:10  
 Sample (adjusted): 1982 2018  
 Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.121183	0.198839	30.78467	0.0000
LPOS	0.102745	0.032812	3.131312	0.0037
LATM	-0.087131	0.039048	-2.231390	0.0328
LMOP	0.051411	0.024498	2.098568	0.0438
ECM(-1)	-0.386261	0.168626	-2.290631	0.0287
R-squared	0.851302	Mean dependent var		6.071049
Adjusted R-squared	0.832714	S.D. dependent var		0.293737
S.E. of regression	0.120140	Akaike info criterion		-1.275231
Sum squared resid	0.461875	Schwarz criterion		-1.057540
Log likelihood	28.59178	Hannan-Quinn criter.		-1.198485
F-statistic	45.80021	Durbin-Watson stat		2.000925
Prob(F-statistic)	0.000000			

**Interpretation of the Result**

The R<sup>2</sup> which is the coefficient of determination or the measure of goodness of fit shows the degree of variation in the dependent variables, as explained by the independent variables all taken together. The closer our R<sup>2</sup> is to 1, the better the goodness of fit of the model. From the result in table 4.3 above, we found out that our R<sup>2</sup>= 0.851302. This is closer to 1 and thus indicates that our model displayed a good fit. The adjusted R<sup>2</sup> = 0.83 this implies that despite the adjustment in the degree of freedom our variables can still explain about 83% of the changes or variation in the model. Thus, it is in line with the result of the goodness of fit of the model.

The f-statistics is used to test the overall statistical significance of our parameter

in the model. If the probability of  $f$  in the computed model is greater than the desired level of significance (0.5) we accept the null hypothesis and reject the alternative. From the result in table 4.3 above the computed value of  $f$  is 45.80021 while its probability is 0.00000. Since its probability is less than 0.05 we accept alternative hypothesis which states that the independent variables are jointly statistically significant in explaining the dependent variable.

The Durbin Watson statistic is used to test for the presence or otherwise of autocorrelation in our regression model. When the value of our d-w statistics is 2, it means the absence of autocorrelation among the explanatory variables in the model.

The a priori expectation is determined by the existing economic theory and it indicates the signs of the economic relationship under consideration. From the result of our estimated model it was discovered that point of Sale has a positive sign given its value as 0.102745. This implies that increase point of sale in increase the performance of small and medium scale enterprise by 10%.

Automated teller machine has negative sign given its value as -0.087131, this means that increase in automated teller machine increase the performance of small and medium scale enterprise by 0.87%, and this conforms to our a priori expectation. Mobility of payment has a positive sign given its value as -0.051411. This suggests that negative sign also decreases the performance of small and medium scale enterprise by 0.51%. This conforms to our theoretical expectation.

The t-statistics, this helps in detecting the individual statistical significance of parameter from the model. It was discovered that both automated teller machine and point of sale are positive and statistically significant, which implies that they contributed to performance of small and medium scale enterprise in Nigeria. However, Mobility of payment (MOP) is negative and significant. The coefficient of the error correction term carries the correct sign and it is statistically significant at 5 per cent level with the speed of convergence to equilibrium of 38 percent. From the findings it was observed that internet banking is statistically significant as such the researcher conclude in favour of alternative hypothesis which states that Internet banking has no significant effect on the performance of small and medium scale enterprise in Nigeria

### **Discussion the finding**

The study found that electronic banking has significant effect on the performance of small and medium scale enterprises in Nigeria. This agrees with the findings of Olatokun and Igbinedion (2009) who's found out that constraint such as relative advantage, complexity, observability, and compatibility and trial ability were positively related to attitude to the use of ATM cards. Oyetade and Ofoelue (2012) findings that Automated Teller Machines are mostly used, much frequently for making variety of online payments such as utility bills, T.V subscriptions, GSM recharges by Small and medium scale enterprises. The study also found that Point of sale has influence on the development Small and medium scale enterprises in Anambra state. This also agrees with the findings of Ikpefan and Ehimare (2012), that Point of Sale terminals are deployed to merchant locations where users slot their electronic cards through POS in order to make payments for purchases or services instead of using raw cash. The study further revealed that Mobile banking machine has significant effect on small and medium scale enterprises in Nigeria. The study agrees with findings of Siyanbola (2013) that states that Mobile banking is popular and exciting to the

customers given the low infrastructure requirements and a rapidly increasing mobile phone penetration in Nigeria. Services covered by this product include account enquiry, funds transfer, phone vending, changing password, and bill payments. Finally, the study shows that Internet banking has a significant effect on the development of small and medium scale enterprises in Nigeria. This agrees with the findings of Morufu and Taibat (2012) that the use of internet banking as a tool for minimizing inconvenience, reducing transaction costs, altering customers queuing pattern and saving customers banking time.

## **CONCLUSION**

The importance of the adoption of electronic banking to performance of small and medium enterprises is high. Aside stressing the importance of adequacy in infrastructure which was identified to be required for adoption of electronic banking in rural areas, there are other known variables that contributed positively to the adoption of electronic banking in rural areas; this includes electronic banking security, customer trust, customer education, and customer motivation. It has been identified that the adoption of internet banking in an organisation was prompted by the quest for the use of an alternative mode of payments to the use of cash, as it is the main medium of exchange for goods and services in rural areas. The choice of electronic banking which is a device for electronic payments systems was also to reduce the risk involved in carrying cash for easy transaction and the attendant consequence of having known that this device is used basically for processing payments. The adoption of electronic banking in Nigeria will also reduce the volume of cash to be printed by the agency responsible for the printing; this will reduce the amount of money spent in cash management which can be channeled to other uses. It will also speed up transaction for performance of small and medium scale enterprises in Nigeria. This study therefore recommends as follows:

- i. Increase the number of Automated teller machines especially in the unbanked rural areas to ensure their financial inclusion and financial associability.
- ii. Increase the number of outlets offering point of sale (POS) device to support their economic activities.
- iii. Mobile banking should be encouraged and ensure awareness is created to enlist increased users

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