

## IMPACT OF ELECTRONIC BANKING CHANNELS ON PROFITABILITY OF DEPOSIT MONEY BANKS IN NIGERIA

**MANG, Niri**

Department of Banking and Finance  
University of Jos

**JOHN, Blessing Abecan**

Department of Business Administration  
Faculty of Administration  
Nasarawa State University, Keffi

**JOHN, Emmanuel Kigbu**

Department of Accounting, Faculty of Administration  
Nasarawa State University, Keffi

### ABSTRACT

This study examined impact of electronic banking (e-banking) channels on profitability of Guaranty trust Bank (GTB). The study specifically assessed the impact of automated teller machine (ATM), point-of-sales (POS), mobile banking (MB) and internet banking (INTBK) on the profitability of GTB. The study collected data from bulletins of Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) covering a period of 8 years (2009- 2016). Multiple regression model was adopted to analyze data. Before applying multiple regressions, the data was subjected to pre-diagnostic, normality and post-diagnostic tests. The study found that ATM significantly contribute to profitability of GTB, while POS, MB and INTBK does not contribute significantly to profitability of GTB. The study conclude that ATMs e-banking channels impact profitability of GTB and recommends that GTB should invest more on e-banking channels (ATMs, POS, MB, and INTBK), if they desire to improve the profitability of their operations.

**Keywords:** Automated teller machine, e-banking, point-of-sale, mobile banking, internet banking, Profitability

### INTRODUCTION

21st century banks operate in a highly competitive environment that is also highly dynamic and unpredictable. Shifting economic factors, advances in technology and increased awareness and amplified demands of consumers have made the operating environment extremely disruptive. Consequently, banks seek ways of serving customers better with a view to enlisting their support, and also ways of improving their efficiency. Adoption of electronic banking (e-banking) is one of the many ways banks have sought to remain viable and competitive.

E-banking has reshaped the way banks operate, so much so that only banks that overhaul their payment and delivery systems and apply information and technology to their operations are likely to survive and prosper in the new millennium (Woherem, 2000). Similarly, the advent of globalization has electronic business systems necessary component of business strategy and catalyst for economic development, as technology becomes a major contributor to organizational effectiveness.

Deposit money banks (DMBs) provide financial services to individuals, corporate organization and governments; and promote financial inclusion, that is, providing banking services to unbanked individuals by providing various products that deliver customer satisfaction and improve banks' profitability. Despite

their effort DMBs have not been effective enough in satisfying customers and improving their own profitability. It is suspected that the adoption of e-banking tools hold the key to solving this challenge of DMBs. This is because e-banking offers the opportunity to increase DMBs' efficiency, and satisfy their customers by providing 24hours banking services.

E-banking tools such as point-of-sale (POS), automated teller machine (ATM), and mobile banking (MB) and Internet banking (INTBK) are commonly used among DMBs to deliver banking service. However, the extent to which these tools enhance DMBs' profitability is yet to be fully examined. While previous studies have investigated e-banking and DMBs' profitability, studies using an integrated model encompassing POS, ATM, MB and INTBK are scarce.

Rather, studies frequently examine these channels individually, thus ignoring the effect of integrated use of these technology. Therefore, this study opts to investigate e-banking and DMBs' profitability using an integrated model, and focusing on Guaranty Trust Bank (GTB). Hence, the specific objectives of the study are to examine the impact of POS, ATM, MB, and INTBK on profitability of GTB.

## LITERATURE REVIEW

### Theoretical Framework

Technology Acceptance Model (TAM) provides a foundation for this study. Fred Davis in 1985 proposed TAM. TAM is an information systems theory that models how users come to accept and use a technology that will encourage economic growth. The model suggests that when users are presented with a new technology, many factors influence their decisions about how and when they will use it. The factors are perceived usefulness (PU), perceived ease-of-use (PEOU), and attitude towards using the system. According to TAM, one's actual use of a technology system is influenced by the user's behavioural intentions, attitudes, perceived usefulness of the system, and perceived ease of the system.

The theory hypothesized that the attitude of a user towards a system is a major determinant of acceptance or reject the system. The attitude of the user in turn, was considered to be influenced by two major beliefs; perceived usefulness and perceived ease of use, with perceived ease of use having a direct influence on perceived usefulness. Lai (2016) noted that the rate at which payment systems develop depends largely on a struggle between rapid technological change and natural barriers to new products or service acceptance. This research is anchored on TAM because it best explains the reasons users accept and use a technology that will encourage economic growth mostly in developing economies like Nigeria, as economic growth is one of the major reasons a country adopts a new technology.

### E-Banking Channels

Abaenewe et al. (2013) states that e-banking is the conduct of banking business electronically, relying on information and communication technology (ICT) to implement banking business. E-banking is an innovative service delivery channel that offers financial services like cash withdrawal, funds transfer, cash deposits, payment of utility and credit card bills, cheque book requests, and other financial enquiries, (Onyedimekwu & Oruan, 2013). Imiefoh (2012), views electronic banking as an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. Timothy (2012) on the other hand, opined that e-banking is the use of the Internet as a remote delivery channel for providing services, such as opening a deposit account, a Website and offer these services to its customers in addition to its traditional delivery channels. Common e-banking channels include ATM, POS, MB and INTBK.

ATM is one of the most prominent components of e-banking. ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to go into the bank's book keeping system

with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records, 24 hours a day". Once access is gained, it offers several retail banking services to customers.

POS is an online system that allows customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases (at purchase points). A POS uses a debit card to activate an electronic fund transfer process. Increased banking productivity results from the use of POS to service customers shopping payment requirements instead of clerical duties in handling cheques and cash withdrawals for shopping.

MB involves the use of phones and other smart devices for settlement of financial transactions. It supports person-to-person transfers with immediate availability of funds for the beneficiary. Mobile payments use the card infrastructure for movement of payment instructions as well as secure Short Message Service (SMS) messaging for confirmation of receipt to the beneficiary. Mobile banking is meant for low value transactions where speed of completing the transaction is key. Furst et al. (2002) notes the banks operating profitably are mostly those that embrace e-banking after 1998. Jayawardhena (2000) showed that e-banking improves efficiency. Hernando and Nieto (2005) on their part, argued showed that adoption of e-banking improve banks' financial performance.

### **Concept of profitability**

According to Maheswari (2001), profitability is a relative concept whereas profit is an absolute connotation. Despite being closely related to and mutually interdependent, profit and profitability are two different concepts. However, each one of them has a distinct role in business. Profit refers to the total income earned by the enterprise during the specified period, while profitability refers to the operating efficiency of the enterprise. It is the ability of a firm to make profit on sales.

Profit in financial management is the test of efficiency and a measure of control, to the owners, a measure of the worth of their investment, to the creditors the margin of safety and to the government, a measure of taxable capacity and a basis of legislative action", while "profitability is an outcome of profit. As an absolute term, profit has no relevance to compare the efficiency of a business organisation. A very high profit does not always indicate sound original efficiency and low profitability is not always a sign of organisational sickness.

According to Pandey, (2002), profit is not the prime variable based on which the operational and financial efficiency of an organisation can be compared. Firms having the same amount of profit may vary in terms of profitability. Thus, Kuchhal (1993) stated that profit in two separate business entities may be identical yet, many at times it usually happens that their profitability varies when measured in terms of size of investment.

### **E-Banking and Profitability**

Literature is replete with results of studies that show positive effects of e-banking on profitability of DMBs. Amu and Nathaniel (2016) investigated e-banking and banks' performance in Nigeria, using a cointegration and causality. The study proxied e-banking with value of POS transactions and performance with customers' deposits. The study revealed that POS is not cointegrated with savings and time deposits but is cointegrated with demand deposits.

Similarly, Okoro (2014) examined impact of e-banking instruments on intermediation efficiency of Nigeria's economy; and revealed that there is no significant relationship between Mobile service value and intermediation efficiency of the Nigerian economy within the period under study. This means that the ATM,

POS and Internet services (proxies of e-banking) are major instruments used by customers of deposit money banks in Nigeria.

Also, Ogunlowore and Oladele (2014) studied e-banking and customer satisfaction in Nigeria, with focus on customers of GTB Nigeria Plc. The study found that there is a significant relationship between e-banking and customers' satisfaction, and e-banking has become popular because of its convenience and flexibility, and speed, efficiency and accessibility.

In addition, Abaenewe et al. (2012) studied e-banking and profitability performance of banks in Nigeria. The profitability performance of banks was measured in terms of return on equity (ROE) and return on assets (ROA). The study revealed that e-banking has positively and significantly improved profitability performance Nigerian banks in terms of ROE, while ROA of the banks has not been significantly improved by e-banking.

In view of the forgoing reports in literature, the following hypotheses are formulated to guide the study:

**H<sub>01</sub>:** Automated teller machine has no significant impact on profitability of GTB.

**H<sub>02</sub>:** Point of sales has no significant impact on profitability of GTB.

**H<sub>03</sub>:** Mobile Banking has no significant impact on profitability of GTB.

**H<sub>04</sub>:** Internet Banking has no significant impact on profitability of GTB.

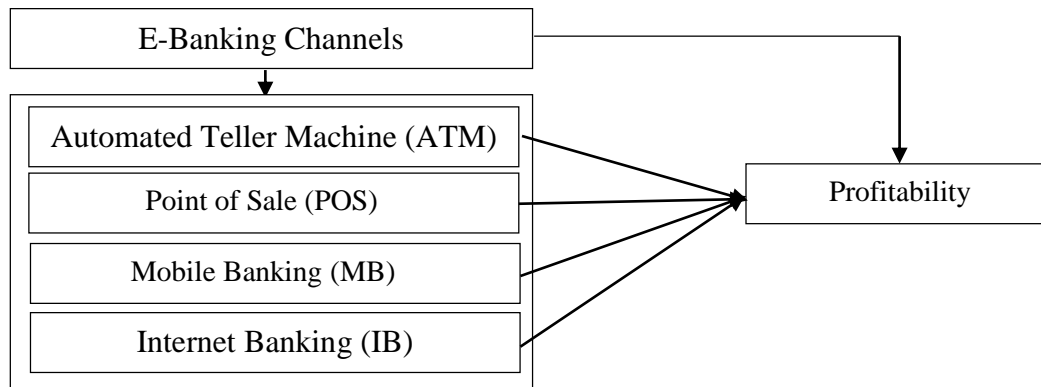


Fig. 1: Conceptual framework of impact of e-banking on profitability

## METHODOLOGY

This study adopted an ex post facto research design. This study focused on GTB Nigeria. This is because it is one of the top users of e-banking channels according to Central Bank of Nigeria (CBN). The researcher used secondary data, that is GTB's Annual Financials that is their profitability and also report on the profit from ATM, POS, MB and INTBK from CBN Bulletin and National Bureau of Statistics (NBS) were obtained to analyze the extent to which e-banking has enhanced their profitability. Multiple regression analysis was adopted in this study to determine impact of components of e-banking on profitability. Before the application of multiple regressions, the data was subjected to pre-diagnostic tests, normality test and post-diagnostic test. This study collected data for the variables from bulletins of CBN and NBS covering a period of 8 years, specifically from 2009 to 2016.

**DATA ANALYSES AND RESULTS**

**Table 1: GTB’s Profitability from ATM, POS, INTBK, and MB from 2009-2016**

Year	Profit	ATM	POS	INTBK	MB
2009	23848061	548.6	11.03	84.15	1.27
2010	36511628	399.71	12.72	25.05	6.65
2011	51653000	1561.71	31.02	59.61	18.98
2012	85264000	1984.65	48.01	31.56	31.51
2013	85546000	2828.93	161.01	47.3	142.8
2014	89171000	3679.88	312.05	74.05	346.48
2015	94308000	3970.25	448.5	91.58	442.37
2016	126837000	4988.13	758.99	132.35	746.4

All measured in Billions of Naira

Source: Central Bank of Nigeria Statistical Bulletin (2016)

**Normality Test**

Data needs to follow a normal distribution in order to meet one of the assumptions of the Ordinary Least Square (OLS).

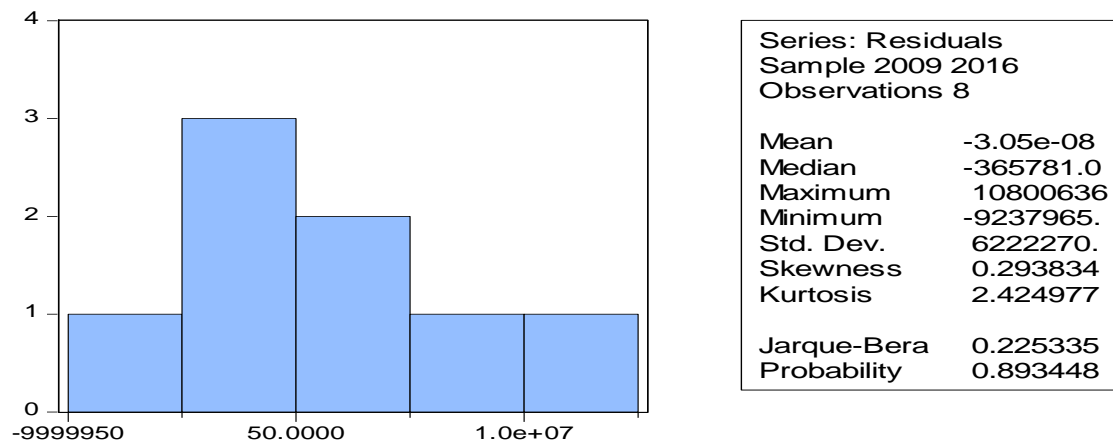


Fig. 2: Normality Test

Fig. 2 shows a Jarque-Bera test that was used to test for the normality of the data. The diagram shows that the P-value of 0.893448 is greater than 0.05 level of significance. Hence, it be inferred that the data is normally distributed and the assumption of normality achieved.

**Model Specification**

Following multiple linear regression model was formulated and used for the testing the hypothesis

$$\text{Prof} = f(\text{ATM}, \text{POS}, \text{INTBK}, \text{MB}) \dots \dots \dots (1)$$

The econometric function is given as:

$$\text{Prof}_t = b_0 + b_1\text{ATM}_t + b_2\text{POS}_t + b_3\text{INTBK}_t + b_4\text{MB}_t + e \dots \dots \dots (2)$$

Where

**Prof** = Profitability at time *t*

**ATM** = Automated Teller machine at time *t*

**POS** = Point of Sale at time *t*

**INTBK** = Internet Banking at time *t*

**MB** = Mobile Banking at time *t*

$b_0$  = the constant,  $b_1, b_2, b_3,$  and  $b_4$  are the coefficients of the explanatory variables and  $e$ = error term. The signs of the coefficients are expected to be:  $b_0 > 0, b_1 > 0, b_2 > 0, b_3 > 0,$  and  $b_4 > 0.$

**Pre-Diagnostic Tests**

Pre-diagnostic tests are applied to this study to ensure that the data used are statistical and econometric standard. That is, to test to know if the data used are stationary or not. Most times series data have the tendency of being non-stationary.

**Unit root test**

It is expected that variable i.e. economic theory requires that variables be stationary (Gujarati, 2004). This is to avoid misleading results that will result to economic or banking policy failure of break down in the long-run. Unit root test was estimated using eviews 9 and the method of Kwiatkowski-Phillips-Schmidt-Shin (KPSS). The result is presented in Table 2.

**Table 2: Unit root result before differencing**

Variables	Stationarity at level		Stationarity at first difference		Level of significance 0.05
<i>PROF<sub>t</sub></i>	<i>I</i> (0)	0.490	<i>I</i> (1)	0.107*	0.463
<i>ATM<sub>t</sub></i>	<i>I</i> (0)	0.491	<i>I</i> (1)	0.282*	0.463
<i>POS<sub>t</sub></i>	<i>I</i> (0)	0.694	<i>I</i> (1)	0.381*	0.463
<i>INBK<sub>t</sub></i>	<i>I</i> (0)	0.494	<i>I</i> (1)	0.327*	0.463
<i>MB<sub>t</sub></i>	<i>I</i> (0)	0.701	<i>I</i> (0)	0.374*	0.463

Source: E-views 9

The result of unit root test before differencing is shown in Table 2. It revealed that there is unit root for the all the variables at level. This is because the critical values at 0.05 level of significance are lower than the level value (i.e. 0.463 is less than 0.490, 0.491, 0.694, 0.494 and 0.701). This indicated that there is unit root and the data need differencing (correcting). The data was differenced and the result showed that the data for the variables became stationary because 0.107, 0.282, 0.381, 0.327 and 0.374 are all less than the critical value of 0.463, signifying that there is no unit root in all the variables, hence, stationary (Appendix A).

**Table 3: Co-integration result**

Series: PROF ATM POS INBK MB  
 Sample: 2009 2016  
 Included observations: 8  
 Null hypothesis: Series are not cointegrated  
 Cointegrating equation deterministics: C  
 Automatic lags specification based on Schwarz criterion (maxlag=1)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
PROF	-4.574407	0.2400	-11.21968	1.0000
ATM	-4.960658	0.1841	-11.76501	0.9981
POS	-3.821767	0.4294	-432.7765	0.9999
INBK	-5.981535	0.0857	-11.19653	1.0000
MB	-3.408041	0.5662	-78.62553	0.9999

Source: E-views 9

Table 3 shows the results of the co-integration test. It demonstrated since one of the p-values under internet banking is less than 10% level of significance (i.e. 0.0857<0.1). Thus, indicating the existence of a long-run relationship between the components of electronic banking and bank profitability.

**Table 4: Error Correction Model (speed of Adjustment)**

Dependent Variable: D(PROF)

Method: Least Squares

Sample (adjusted): 2010 2016

Included observations: 7 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ATM)	6332.625	29602.89	0.213919	0.8658
D(POS)	296278.7	187173.1	1.582913	0.3587
D(INBK)	-119962.1	444231.5	-0.270044	0.8321
D(MB)	-272085.5	167584.8	-1.623569	0.3514
ECM(-1)	-0.849073	0.918819	2.012445	0.0236
C	9179370.	21245159	0.432069	0.7404
R-squared	0.909760	Mean dependent var		14712706
Adjusted R-squared	0.458562	S.D. dependent var		13551293
S.E. of regression	9971380.	Akaike info criterion		34.83671
Sum squared resid	9.94E+13	Schwarz criterion		34.79035
Log likelihood	-115.9285	Hannan-Quinn criter.		34.26368
F-statistic	2.016319	Durbin-Watson stat		1.228999
Prob(F-statistic)	0.487279			

Source: E-views 9

Table 4 show the value of the error correction model is approximately 85%, meaning that the disequilibrium is corrected (or adjusts to) its previous dis-equilibrium period at a speed of 95% in the following year. This indicates that the rate of adjustment is high.

**Table 5: Regression Result**

Dependent Variable: PROF

Method: Least Squares

Included observations: 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ATM	20813.94	6267.342	3.321016	0.0450
POS	335071.7	220001.5	1.523043	0.2251
INBK	-358639.0	200284.5	-1.790647	0.1713
MB	-304027.9	223901.7	-1.357863	0.2676
C	37966743	14900772	2.547971	0.0841
R-squared	0.966600	Mean dependent var		74142336
Adjusted R-squared	0.922067	S.D. dependent var		34046883
S.E. of regression	9504675.	Akaike info criterion		35.24164
Sum squared resid	2.71E+14	Schwarz criterion		35.29129
Log likelihood	-135.9665	Hannan-Quinn criter.		34.90676
F-statistic	21.70527	Durbin-Watson stat		2.985410
Prob(F-statistic)	0.014954			

Source: E-views 9

Table 5 shows the result of the OLS (Multiple Linear Regression). The result was estimated with the software EVIEWS 9. The output shown in Table 4 suggests that the value of the intercept 37966743 is the

predicted value created if all the independent variables are equal to zero. This implies that without any electronic banking activities, the profitability of GTB Plc. will be 37966743. Table 4 also shows that the coefficient of ATM is positive and significant. This shows that increase in ATM usage will increase profit of GTB by 20813.94. Similarly, Table 4 indicates that POS coefficient has a positive and insignificant impact on profit of GTB bank PLC. A unit increase in POS will bring about an increase in profit of banks by 335071.7.

However, the coefficient of INTBK shows that a negative and insignificant impact on profitability of GTB. This indicated that a 1% increase in INTBK will decrease in profitability by -358639.0. The coefficient of Mobile banking (MB) is negative and insignificant. This shows that increase in MB usage will decrease profit of GTB by -304027.9.

The coefficient of determination  $r^2 = 0.97$  shows that a 97% change in profitability of GTB is as a result of the changes in ATM, POS, INTBK and MB; while the F- test with a value of 21.71 and p-value of 0.0114 shows that there is a strong linear dependency existing between the variables. The result further revealed that the problems of autocorrelation and heteroscedasticity since the Durbin-Watson is approximately 2.

**Post-Analysis Tests**

**Table 6: Heteroskedasticity Test: White**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.502208	Prob. F(4,3)	0.7424
Obs*R-squared	3.208465	Prob. Chi-Square(4)	0.5236
Scaled explained SS	0.321468	Prob. Chi-Square(4)	0.9884

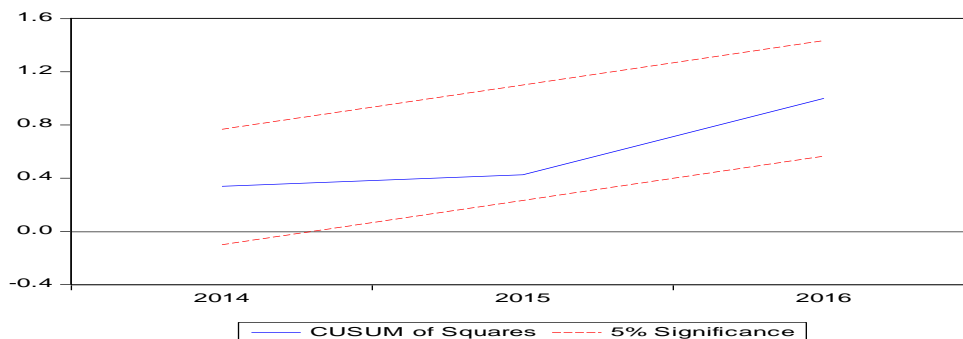
From Table 6, the P-value of the 0.7424 is greater than the level of significance of 0.05. This means that there is no heteroskedasticity.

**Table 7: Auto-correlation -Durbin-Watson test**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.750532	Prob. F(2,1)	0.6323
Obs*R-squared	4.801361	Prob. Chi-Square(2)	0.0907

The P-value of the Breusch-Godfrey Serial Correlation LM Test is 0.6323 is greater than the level of significance of 0.05. This implies that there is no serial correlation.



**Fig. 2: Stability Test**

Fig. 2 indicated that the model is stable since the middle line did not overlap between the two lines.



## DISCUSSION OF FINDINGS

For hypothesis one, the null hypothesis was rejected and the alternate hypothesis which states that Automated teller machine has a significant impact on profitability of GTB is accepted indicating that the better ATM services and performance are likely to generate more profit for GTB. This finding agrees with previous study of Okoro (2014), who studied the impact of selected e-payment instruments on the intermediation efficiency of the Nigerian economy. The study found that there is significant relationship between ATM and intermediation efficiency.

In hypothesis two, we failed to reject the null hypothesis which states that POS has no significant impact on profitability of GTB, while is rejected. This result is in disagreement the work of Okoro (2014), who found that POS is significant relationship between ATM and intermediation efficiency.

Furthermore, for hypothesis three, the null hypothesis was upheld, which states that Mobile banking has no significant impact on profitability of GTB. While alternate hypothesis was rejected. This finding is consistent with that of Okoro (2014), who studied the impact of selected e-payment instruments on the intermediation efficiency of the Nigerian economy. The study found that there is no significant relationship between mobile banking and intermediation efficiency.

Finally for hypothesis four, the null hypothesis was not rejected which stated that internet banking has no significant impact on profitability of GTB. But the alternate hypothesis rejected indicating that even though there is a positive impact of internet banking on profitability, it is not significant to profitability for GTB. This finding does corroborate with Okoro (2014), who studied the impact of selected e-payment instruments on the intermediation efficiency of the Nigerian economy. The study found that there is significant relationship between internet banking and intermediation efficiency.

Based on the findings, the study concludes that ATM, POS, MB and INTBK are the most used e-banking channels by GTB to improve profitability and efficiency; that use of ATM significantly improve the profitability of GTB, while POS, MB and INTBK do not contribute substantially to their profitability. The study also concludes that GTB would achieve significant growth and boost their profitability, if they invest more on e-banking channels and also integrate them to provide seamless service to customers. The study therefore recommends that GTB should invest more in electronic banking channels such as ATM, POS, MB and INTBK, and also create awareness and encourage customers on the use of these e-banking channels

## REFERENCES

- Abaenewe, Z. C., Ogbulu, O. M., & Ndugbu, M. O. (2013). Electronic banking and bank performance in Nigeria *West African Journal of Industrial & Academic Research*, 6(1).
- Adewuyi .I.D. (2011). Electronic banking in Nigeria: Challenges of the regulatory authorities and the way forward *International Journal of Economic Development Research and Investment*, 2(1).
- Amu, C. U., & Nathaniel, C. 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*, 6(3).
- Antonio, T. P. (2010). *What determines the profitability of banks? Evidence from Spain*.

- Babatunde, O., & Sunday, O. (2017). E-banking in Nigeria: Issues and challenges. *Research Journal of Finance and Accounting*, 8(6).
- Brunilda, D., & Elvana, M. (2015). Factors influencing the bank profitability. *Asian Economic and Financial Review*, 5(3).
- Eric, A. M. (2016). Effect of electronic banking on the financial performance of commercial banks in Kenya.
- Hannington, O. O. (2013). The Effect of electronic banking on the financial performance of commercial banks in Kenya.
- Ian, N., & Mlungisi, S. (2015). Benefit and risks of e-banking: Case of commercial banking in Zimbabwe.
- Imola, D., & Claudia, I. (2014). E-banking services: Features, challenges and benefits. *Annals of the University of Petroşani Economics*, 14(1), 49-58.
- John, K., & Mensah, M. (2014). Impact of e-banking on the profitability of banks in Ghana *Research Journal of Finance and Accounting*, 5(22).
- Muhammed, J., & Muhammad, Z. (2016). Benefits and risks of electronic banking in the contest of customers. *Journal of Applied Environmental and Biological Sciences*.
- Ngango, M. A. (2013). Electronic banking and financial performance of commercial banks in Rwanda: A case study of Bank of Kigali.
- Ngango M.A. (2015) Electronic banking and financial performance of commercial banks in Rwanda: A case study of Bank of Kigali
- Ogunlowore, A. J., & Oladele, R. (2014). Analysis of electronic banking and customer satisfaction in Nigeria. *European Journal of Business and Social Sciences*, 3(3).
- Okoro, A. S. (2014). Impact of electronic banking instruments on the intermediation efficiency of the Nigerian economy. *International Journal of Accounting*, 1(6).
- Olorunmolu, J. O. (2009). Influence of e-banking on customer services in Yobe State as perceived by banks' customers.
- Lai, P. C. (2017). The literature review of technology adoption models and theories for novelty. *Technology Journal of Information Systems and Technology Management*, 14(1), 21-38.
- Seif, O. A., & Muhannad, A. A. (2016). A theoretical discussion of electronic banking in Jordan by integrating technology acceptance model and theory of planned behavior. *Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(3), 272–284.
- Shehu, U. H., Aliyu, M., & Musa, A. (2013). Electronic banking products and performance of Nigerian listed deposit money banks. *American Journal of Computer Technology and Application*, 1(10).
- Taiwo, J. N., & Agwu, M. E. (2017). The role of e-banking on operational efficiency of banks in Nigeria. *Basic Research Journal of Business Management and Accounting*, 6(1), 01-10.
- Vincent, O. O. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1), 237-252