

**Research article**

# **ELECTRONIC BANKING PRODUCTS AND PERFORMANCE OF NIGERIAN LISTED DEPOSIT MONEY BANKS**

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## **Abstract**

This study investigated the influence of electronic banking products on performance of Nigerian DMBs. The study became necessary as a result of increased penetration of electronic banking which has redefined the banking operations in Nigeria and world over. The population of the study is all the twenty-one Deposit Money Banks (DMBs) listed on the Nigerian Stock Exchange. Systematic sampling technique was used and six (6) banks were selected as the sample of the study. Data were collected from secondary source through the annual report and accounts of the sampled Banks and insider information from the employees working in the selected banks, respectively. The performance of these banks was measured in terms of returns on equity (ROE) The study revealed

that the adoption of electronic banking products (e-mobile and ATM transactions) has strongly and significantly impacted on the performance of Nigerian banks while on the other hand, it revealed that e-direct and SMS alert have not significantly impacted on the performance of the banks. It is therefore recommended amongst others that more awareness should be created as to the numerous advantage of using the E-Mobile services by the Bank's customers as their increase usage will bring about increase in the performance of the Banks. **Copyright © AJCTA, all rights reserved.**

**Keywords:** Electronic Banking Products, Performance, Nigerian DMBs

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## I INTRODUCTION

There is nothing as constant as change. The ever increasing customer sophistication and their urge for speedy, efficient and accurate service delivery has made the banking environment not only dynamic but ultimately becoming complex in nature. The ever-expanding commerce has engendered globalization, which has effectively reduced the world commercial community to a global village. Similarly, the importance of business knowledge is nothing new; what is new is the recognition of the need to manage it like any other asset for efficient performance. To manage knowledge, banks need to learn how to share information throughout the organization and to implement systems for creating new knowledge (Nickels et al, 2002).

Technological developments, particularly in the area of telecommunication and information technology are impacting significantly on businesses. To make a prompt, reliable and detailed information empowers business to make the right decision at the right time. Information about money is just as important as money itself (Citibank, 2004). In fact, the way in which an organization manages and uses its financial information can either reduce or optimize its performance (Ashaolu, 2004). The above assertion has led banks to make strides into information system based on today's technology. There is growing interdependence between business strategy, rules and procedures on the one hand and information systems software, financial information can either reduce or optimize its performance (Ashaolu, 2004).

The above assertion has led banks to make strides into information system based on today's technology. There is growing interdependence between business strategy, rules and procedures on the one hand and information systems software, hardware, databases and telecommunications on the other hand. This relationship is increasing to the point that information technology has become a strategic instrument in today's banking. That is, what a bank will like to do in a next five years is often dependent on what its information system will be able to do. Increasing customer service delivery, market share, becoming the high quality or low cost producer, developing new products and increasing workers productivity depend more on the kind and quality of the development of IT in are organization.

The electronic revolution in banking basically centers on change in the distribution channels of financial institutions. The basis for the emergence of the modern electronic distribution channels is the result of the evolution of the concept of money. In the days of barter, the ability to pay for goods and services was reflected in the physical existence of the goods, which could be used for exchange. Then, came hard cash in the form of coins made out of precious metals. This was then followed by the advent of fiduciary money in the form of modern coins and paper notes.

Today, an individual's ability to pay for goods and services is simply reflected in accounting records of his or her bank. Thus, it is important to appreciate at the outset that money as it is defined today is just simply information, which can be electronically transmitted to facilitate economic transaction. It is this new definition of money, which has resulted in the electronic revolution of financial institution (Balachandher, 2001).

Many Nigerian Bank have over the years streamlined their organizations, tailored their products and services delivery and automated their operations to enhance their performance and capture the market. As the struggle to enhance performance intensifies, the focus is moving to the complete automation of all their operation and services. The system or industry is highly competitive and competition is expected to intensify as new players of local and global scope entered the market. As the competitive terrain becomes more challenging to navigate, banks will need to maintain their competitive edge, and to do this; they have to adopt new technology.

Consequently, Nigerian bank's investments in information technology (IT) equipment have grown rapidly in the last ten years. There have been investments in computer hardware, software and telecommunication equipment, the corollary of which has been the introduction of Electronic Bank (E-Banking) in the Nigeria Banking Industry.

The introduction of Universal banking practice in Nigeria and the adoption of electronic banking by DMBs have offered increased services to customers with attendant increase in customer risk exposure. The changing environment of bank management in Nigeria has impacted much on the number of services and risk which Nigerian banks face. Electronic banking is the conduct of banking business electronically which involves the use of information communication technology to drive banking business for immediate and future goals.

Daniel (1999) describes e-banking as the provision of banking services to customers through internet. Electronic banking is defined to include the provision of retail and small value banking products and services through electronic channels as well as a large value electronic payment and other wholesale banking services delivered electronically. Though, Alsmadi and Alwabel (2011) expressed that the definition of electronic banking varies among researchers partially because electronic banking refers to several types of services through which bank customers can request information and carry out banking services. Almost all banks in Nigeria offer online, real-time banking services. Banks that are not able to brace up to this new development are rapidly losing their customers. Online, real-time banking system has now become commonplace as customers are offered the ease of operating an account in any branch of their bank's network.

From the foregoing, it is crystal clear that, technology is the key driver of change. For the change to be beneficial, the use of technology should be business driven to meet clearly defined goals. Thus, the choice of electronic banking in Nigerian banking system is not a mean stride. This underpins the essence of this research work, which aims at evaluating the impact of e-banking on the performance of Nigerian Banks.

Since Nigerian banks gravitate to e-banking, rooted in the urge to completely satisfy the demand of their customers, and improve the efficiency and effectiveness of their operation; customers could transact business anywhere just with a push of a button; 24 hours a day, 7 days a week; enjoy quick service delivery etc. just because, transactions can be processed faster and most conveniently. All these are expected to give rise to higher volume of turnover with its attendant overall profitability to the banks.

Lamentably, there still exist some problems militating against Nigerian banks from reaping the full benefit of e-banking. There is incessant system break down and inconsistency services on the on-line connectivity. This has affected banks effectiveness and efficiency of operation with its attendant negative impact on their productivity and overall profitability. Similarly, banks are often faced with system redundancy due to rapid technological changes resulting to excessive costs hence, lower profitability.

Again, the issue of insecurity and lack of privacy occasioned by the activities of hackers is another problem militating against the banks from milking the full benefit offered by e-banking. These could lead to financial and capital losses due to inaccurate processing of transactions, data privacy and confidentiality, unauthorized access or intrusion to financial institutions' systems and transaction, which will in turn, take a heavy toll on their profitability and overall performance.

The main objective of the study is to examine the effect of E-banking products on the performance of Nigerian DMBs. More specifically the study seeks to achieve the following objectives:

- i. To determine the impact of automated teller machine (ATM) transaction on the performance of Nigerian DMBs.
- ii. To ascertain the influence of Electronic Direct (ED) on the performance of Nigerian DMBs.
- iii. To examine the effect of SMS Alert (SMSA) on the performance of Nigerian DMBs.
- iv. To investigate the contribution of Electronic Mobile (EM) on the performance of Nigerian DMBs.

In view of the above objectives the following hypotheses have been formulated in null form:

**Ho<sub>1</sub>:** ATM transaction has no significant impact on the performance of Nigerian DMBs,

- Ho<sub>2</sub>:** E-Direct has no significant influence on the performance of Nigerian DMBs,  
**Ho<sub>3</sub>:** SMS Alert has no significant effect on the performance of Nigerian DMBs,  
**Ho<sub>4</sub>:** E-Mobile has no significant contribution on the performance of Nigerian DMBs

## II LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The revolution of information technology has influenced almost every spheres of life; notable is the banking sector. The introduction of electronic banking has changed and redefined the ways banks were operating. Similarly, the emergence of global economy, e business has increasingly become a necessary component of business strategy and a strong catalyst for economic development, as technology is now considered the major contributor for organizations' success and as their core competencies. Consequently, electronic banking system has become an important practice among commercial banks in Nigeria, owing to the fact that the introduction of this banking system has improved banking efficiency in rendering services to customers. Thus, the banks (domestic or foreign) are investing more on providing the customers with the new technologies through e banking.

According to Abaenewe, Ogbulu, and Ndugbu, (2013) electronic banking is the conduct of banking business electronically which involves the use of information communication technology to drive banking business for immediate and future goals. Electronic Banking System is seen to be an innovative service delivery mode that offers diversified financial services like cash withdrawal, funds transfer, cash deposits, payment of utility and credit card bills, cheque book requests, and other financial enquiries, (Onyedimekwu and Oruan, 2013). Similarly, Imiefoh (2012) sees 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. That is, automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. E banking generally implies a service that allows customers to use some form of computer to access account-specific information and possibly conduct transactions from a remote location like home or workplace, (Odulaja 2012).

Consequently, e-banking has become popular because of its convenience and flexibility, and also transaction related benefits like speed, efficiency, accessibility and so on (Elisha, 2010). He described e-banking as the term used for new age banking system, it could also be called online banking and it is an outgrowth of PC banking. That is a banking which includes the systems that enable financial institution customers, Individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet or mobile phone. further, electronic banking is referred to as the process of using the internet as delivery mode for the provision of services like opening a deposit account, electronic bill payments, and online transfers. These services can either be provided by the banks having physical offices or by creating a website and providing services through that or services can be provisioned through a virtual bank as well. The internet is used as a strategic and differentiating channel to offer high valued financial services and complex products at the same time or improved quality at lower costs without physical boundaries and to cross sell products like credit cards and loans.

Performance can be described as a measure that reveals the position of an organization. It helps to tell how far and well an organization has improved in terms of its profitability as a result of its services delivery. Performance of a business can be identified using different proxies. The study by Abaenewe, Ogbulu and Ndugbu (2002), proxy performance using return on asset (ROA) and return on equity (ROE). However, it is important to note that firms' profitability is not the only performance indicator of an organisation. Thus, studies like that of Ibukunle and James (2012), Olorunsegun (2010) and some others have identified performance in a different perspective; productivity, increase in sales, cost reduction, competitiveness, efficiency and effectiveness. Base on the above, the study makes a conclusion that performance of a business can be measured with any of these; profitability ratios, growth rates and profit margins. Consequently, the study measures banks' performance using return on assets (ROA) which is consistent with that of Abaenewe et al (2013). This profitability measure checks the managerial efficiency in the usage of the business assets to turn over and make profit.

As earlier mentioned, e- banking system is said to have increase the performance of the banking industry. Several researches have been carried out to find the extent to which e banking has impacted on banks using both qualitative and quantitative data. Though, there still lie divergent views. Milind (2005) reported that transaction with internet banking does not have a significant impact on performance and risk profile. Thus, concluded that internet banking

has not proved to be a performance enhancing tool in major credit unions in Australia. Abaenewe et al (2013) analysed the effect of e banking on bank performance in Nigeria. They found that e banking has positively and significantly impacted on return on equity while e banking did not impact on return on assets. Similarly, Ibukunle and James (2012) claimed that e banking has led to increase customer satisfaction, improved operational efficiency, reduced transaction time, better competitive edge, reduced running cost and ushered in swift response in service delivery.

In their research, Sana, Mohammed, Hassan and Monina (2011) investigated the impact of e banking on the profitability of Pakistani banks. Their findings reveal that e- banking has increased the profitability of banks, hence enabling them to meet their costs and earn profits in short span of time. Also, the illiteracy of customers is not regarded as a major impediment in provision of their products. Furthermore, Olorunsegun (2010) found that bank has an effective e banking system which has improved its customers' satisfaction, by critical appraisal of e banking in unity bank.

Subsequently, Elisha (2010) studied the prospects of e banking in developing economy. The study showed that e banking serves several advantages to Nigeria banking sector; provides convenience and flexible advantages. It also provides transaction related benefits like easy transfer, speedy transaction, less cost and time saving. Commission, (2011), investigated internet banking and performance of micro and small enterprises in Costa Rica. The result shows that internet use is limited in MSE daily operations because of limited access to computer and the relatively low penetration of internet services.

Automated Teller Machine (ATM) - Worldwide, the use of paper cash still remains the most widely used and acceptable means of settling financial transactions and obligations. However, the proportion of cash transactions is increasingly on the decline, especially in advanced economics (Amedu, 2005). In USA, where the use of cash is still prominent, compared with European countries, it represents 50 percent or more of the total transactions. Of course, cash is a non - electronic payment method. However, the physical carriage of cash as well as the visit to the bank branches is being reduced by the introduction of an electronic device, ATM. An ATM device allows a bank customer to withdraw cash from his account via a cash dispenser (Machine), and the account is debited immediately. A fundamental advantage is that it needs not to be located within the banking premises. It is usually in stores, shopping malls, fuel stations etc. This ATM uses card and this Card is a Chip device consisting of circuit element on single silicon chip. The Card a complex circuits that process microprocessors with a single chips that contain the complete arithmetic and logic unit of computers. It provided for the banks customers to perform balance inquiry, mini statement and cash withdrawal as well as transfers through the use of Automated Teller Machines. This green card can also be used for Internet/Online and POS transactions.

Electronic Direct (ED) – Monetary value measured in currency units stored in electronic form on an electronic device in the consumer's possession. This electronic value can be purchased and held on the device until reduced through purchase or transfer.

SMS Alert - Our customers carry out debit/credit transactions on their accounts and the need to keep track of these transactions prompted the creation of the alert system by the Bank to notify customers of those transactions. The alert system also serves as notification system to reach out to customers when necessary information need to be communicated.

E-Mobile Banking - This is a product that offers Customers of a Bank to access services as you go. Customer can make their transactions anywhere such as account balance, transaction enquiries, stop checks, and other customer's service instructions, Balance Inquiry, Account Verification, Bill Payment, Electronic fund transfer, Account Balances, updates and history, Customer service via mobile, Transfer between accounts etc.

There are various theories in the field of finance that could be adopted to anchor the variables of the study. These include; shareholders theory which describes and tell how best the wealth of the shareholders' could be maximized to give the optimum value expected. Stakeholders' theory further talks about the different interest of those who have a stake in the organisation. Opportunity theory looks upon and considers the various opportunities available to an organisation to meet its targeted goals. Furthermore, there also exist the technology theory that looks upon the technology development and its application in the organisation for possible growth. Similarly, the agency theory the best and accepted way the agent discharge their duties to help the business grow. Other theories are; peel theory,

routine activity theory. However, the study is underpinned by the agency and the technology theories. The justification for their use is based on the fact that better performance of an organisation can only be attained when agents (managers) of the business are efficient and effective in their duties. Also, it is expected that new technological knowledge should be employed to help business do better.

### III METHODOLOGY AND VARIABLE MEASUREMENT

The study adopts the Ex-post factor and correlational designs. This is because the study's paradigm is post-positivism. The secondary source of data was employed through the use of the Bank's annual reports and accounts. The population of the study consists of the listed twenty-one (21) Nigerian DMBs as at 31<sup>st</sup> December 2011. Systematic sampling technique was used to arrive at the sample size of six (6) banks. The study shall cover a period of six years (2006-2011). The period used is more appropriate because the banks started e-banking products and services from 2003 and 2004 respectively. Hence, the period will provide us with information about the banks performance. Multiple longitudinal panel regression technique is used for the analysis after conducting robustness tests which the results shows favourable but not reported for brevity.

The variables used in this study are measured as follows;

#### Dependent Variable - Return on Equity

Since this study examines the impact of e-banking products on the performance of Nigerian DMBs, the dependent variable is banks' performance. Performance refers to the degree of success in attaining stated objective (Sathye, 2005). The major objective of banks as other financial institutions is maximizing shareholders' wealth. Following the literature, Return on Equity (ROE) is the common measure of performance. Return on equity reflects how effectively a bank management is using shareholders' funds. A bank's return on equity is affected by its return on assets as well as by the bank's degree of financial leverage. To measure profitability of each bank, we calculated return on equity (ROE) as:

$$ROE = \frac{\text{Net Income after taxes}}{\text{Total Equity capital}}$$

#### Independent Variables

**ATM-** This is measured by the total amount spent on ATM related expenses, including electronic infrastructures, installations, continuing maintenance, depreciation and employees training, for each period over the period of the study.

**Electronic Direct-** This variable is measured by the cost of providing electronic direct services by the selected banks; like service and technological upgrade, maintenance, training and development of staff; in respect to e-direct services rendered to the customers. Data collected from the insider employees of the respective selected firms.

**SMS Alert-** The costs associated with sending SMS alert to customers; the network service provider, purchases, maintenances and upgrades made on SMS alert technologies and development of staff facilitators that see to it that automatic SMS alerts are sent to customers for every transactions, appropriately.

**Electronic Mobile-** All the costs associated with providing e-mobile services to customers; the network service provider, purchases, maintenances and upgrades made on relevant technologies and development of staff facilitators that see to e-mobile transactions. Data sourced from staff of the respective banks.

#### Model Specification

$$ROE_{it} = \beta_{0it} + \beta_{1it} ATM_{it} + \beta_2 ED_{it} + \beta_3 SMSA_{it} + \beta_4 EM_{it} + e_{it}$$

Where;

ROE = Return on Equity,

$\beta_1 - \beta_4$  = Slope coefficient,

$\beta_0$  = intercept,

ATM = Automated Teller Machine,  
 ED = Electronic Direct,  
 SMSA = SMS Alert,  
 EM = Electronic Mobile.  
 e = error term.

## IV RESULTS AND DISCUSSIONS

The sample descriptive statistic is first presented in table 1 where the minimum, maximum, mean, standard deviation and kurtosis of the data for the variable used in the study are described. The correlation matrix for the dependent and independent variables are presented and analyzed.

**Table1:** Descriptive Statistic

	Min	Max	Mean	Std. Dev.	N
ROE	-3.07	6.64	1.9086	1.90421	36
E-Direct	6.00	71.00	26.2833	17.26302	36
SMS Alert	4.00	49.00	14.2000	9.79122	36
E-Mobile	10.00	45.70	22.7333	7.98842	36
LN_ATM	4.63	10.44	6.5136	1.20469	36

**Source: SPSS Output**

Table 1 reports the descriptive statistics for the explained and explanatory variables respectively (ROE = Return on Equity, E-Direct =Electronic direct, SMS Alert, E-Mobile = Electronic Mobile banking and ATM = Automated teller machine. Most prominent result is the high standard deviation of Electronic direct (17.26) relative to the standard deviation of other independent variables included in the model of the study which ranges between 1.20 to 9.79. The high standard deviation of the Electronic direct indicates its lowest contribution to the performance of the listed DMBs in Nigeria. The Automated Teller machine has the lowest standard deviation; hence, it is expected to have the highest contribution to the performance of the listed DMBs in Nigeria.

Finally, the kurtosis reveals that data obtained for all the variables including dependent and independent variables are not abnormal. This signifies the normality of the data and substantiates the validity of the regression results.

### Correlation Matrix

Table 2 contains correlation values between dependent and independent variables as well as between independent variables themselves. The values are obtained from pearson correlation of 2-tailed significance. It shows the correlation matrix with the top values containing the pearson correlation coefficient between all pairs of variables and the bottom values containing two-tail significance of these coefficients.

**Table 2:** Correlation Matrix

	ROE	E-DIRECT	SMS ALERT	E-MOBILE	LN_ATM
ROE	1	-0.439	-0.289	-0.294	-0.474
E-DIRECT		1	0.869	0.904	0.926
SMS ALERT			1	0.810	0.829
E_MOBILE				1	0.891
LN_ATM					1

**Source: SPSS Output**

Looking at the pattern of association between the explained and explanatory variables, it shows that the variables correlates perfectly (between 0.29 to 0.47) and all were significant between 1% to 10%. Thus there is no correlation coefficient that is particularly larger than 10%. Return on Equity is 44% negatively related with Electronic direct, the lesser the Return on Equity. It also shows that ATM is strongly negatively related to return on Equity at 1% level

of significant indicating its lesser contribution to increasing the firm's Return on Equity. Both SMS Alert and Electronic mobile are negatively related with Return on Equity by 29%.

### Summary of the Regression Results

This section presents the regression result of the dependent variable (ROE) and the independent variables of the study (E-Direct, SMS Alert, E-Mobile and ATM). It follows with analysis of the association between dependent variable and each independent variable individually and cumulatively.

**Table3:** Regression Results: ROE and Electronic Banking Products

Variables	Coefficient	t – statistics	P-Values
Constance	7.237	2.446	0.020
E-Direct	-0.076	1.472	0.151
SMS Alert	0.075	1.306	0.201
E-Mobile	0.180	2.108	0.043
ATM	-1.299	-2.022	0.052
R			0.601
R <sup>2</sup>			0.361
Adj. R <sup>2</sup>			0.279
F – stat			4.378
F sig.			0.006
Durbin Watson			1.801

**Source: SPSS Output Result**

The cumulative correlation between dependent variable and independent variables and all the independent variables is 0.60 indicating that the relationship between Return on Equity and Electronic banking products used in the study is 60% which is positively, strongly and statistically significant. This implies that for any changes in Electronic banking products of listed DMBs in Nigeria, their Return on Equity will be directly affected.

The cumulative R<sup>2</sup> (0.36) which is the multiple coefficient of determination gives the proportion or percentage of the total variation in the dependent variable explained by the explanatory variables jointly. Hence, it signifies 36% of the total variation in Return on Equity of listed DMBs in Nigeria is caused by their E-Direct, SMS Alert, E-Mobile and the Automated Teller Machine (ATM). This indicates that the Model is fit and the explanatory variable are properly selected and used.

The Durbin Watson tests value of 1.801 falls within the lower and upper limit of table 4.5 DA of Gujarati, 4<sup>th</sup> edition. This shows that serial correlation is not a problem to the validity statistical inferences drivable from the regression result of the study. The F-statistic value of 4.378 shows that the model of the study is well fitted; this is further substantiated by the significant value of 1%.

From the table 3 above, it is observed that the t-value for Electronic direct (E-Direct) is -1.472 which is not statistically significant. This signifies that Electronic direct has not significantly impact on the performance of listed DMBs in Nigeria. This implies that whether increase or decrease in the amount spent by banks on the Electronic direct may not necessarily increase or decrease the performance of firms.

The result therefore provides an evidence of failing to reject null hypothesis 1 of the study which states that Electronic direct has no significant impact on the performance of listed DMBs in Nigeria. For SMS Alert it is observed that the t-value for SMS Alert is 1.306 which is not statistically significant. This signifies that SMS Alert has no significantly influence on the performance of listed DMBs in Nigeria. This implies that whether increase or decrease in the amount spent by banks on the SMS Alert may not necessarily increase or decrease the performance of firms. The result therefore provides an evidence of failing to reject null hypothesis 2 of the study which states that SMS Alert has no significant impact on the performance of listed DMBs in Nigeria.

The Electronic Mobile showed a t-value of 2.108 with significant value of 0.043. This signifies that Electronic mobile (E-Mobile) is significantly positively and strongly influencing performance of listed DMBs in Nigeria. It implies that when there is one Naira increase (₦1) in Electronic Mobile, the Performance of listed DMBs in Nigeria will increase by ₦2.11. This may be as a result of the efficiency involve in use of E- mobile as a medium of transaction which has made it easier for people to access money, make transfer, make payment from and to banks from wherever the banks customers are at a particular giving time. Also the possible explanation for the observed relationship is that customers in view of enjoying off bank transactions, can stay in the comfort of their homes, offices or where ever and do their transactions such as accessing money, making payment, transfers, impulsive buying inclusive, just with their electronic mobile gadgets. This invariably could lead to increase in banks revenues as more transactions attract more charges. The result on the other hand, provides an evidence of rejecting null hypothesis 3 of the study which states that Electronic Mobile has no significant impact on performance of listed DMBs in Nigeria.

Finally, the Automated Teller Machine has a t-value of -2.022 with significant value of 0.052. This signifies that Automated Teller Machine (ATM) is significantly negatively and strongly influencing Performance of listed DMBs in Nigeria. It implies that when there is one Naira (₦1) increase in what the banks spend on Automated Teller Machine, the performance of listed DMBs in Nigeria will decrease by ₦2.02. This is may as a result of the cost of maintenance, and the small amount they charge customers for using ATM which may not necessarily cover the amount spent in buying and maintaining such machines. Also the recent initiative by many banks to stop charging their customer when they withdraw from their own ATM or ATM of another banks, with this the financial implication of buying and maintaining the ATM machine solely lies on the individual banks and not the customers. This may lead the banks in Deeping their hands into the banks profit to cater for such overhead cost. In addition the possible explanation for the observed relationship is that the costs associated with ATM, which includes electronic infrastructures, continuing maintenance, depreciation and employees training are higher than the revenues from ATM services in the Nigerian DMBs, as can be obviously noticed by the enormous amounts in the data for ATM. The result therefore provides an evidence of rejecting the null hypothesis 4 of the study which states that Automated Teller Machine has no significant contribution on performance of listed DMBs in Nigeria.

## V. CONCLUSIONS AND RECOMMENDATIONS

The study was carried out in order to assess the impact of electronic banking products in the listed Nigerian DMB. The general introductory aspect shade more light on the essentials of electronic banking. Many literatures and academic publications from different authors in electronic banking products were reviewed in the course of this work. Also, the prospects of electronic banking were looked into critically. Electronic banking is said to have improved the fortune of the Nigerian DMBs, achieved by adopting the CBN banking guidelines.

The revolution of technology and communication has affected the world of business significantly. While the banks are facing financial liberalization and the pressure of international competition, it is urgent for them to improve their performance and own competitiveness. Hence, banks have adopted e-banking as one of the modern applications in the provision of banking services. However, previous banking studies show mix results about the impact of e-banking on banks' performance. Thus, we cannot conclude that adopting e-banking decision is the key factor in improving bank performance and growth in all banking environments. In this study, we focused on the e-banking products undertaken by Nigerian DMBs. We examined the impact of e-banking on the performance of NDMBs covering the period 2006-2011.

Therefore, base on the major findings the following conclusions are drawn:

- i. Electronic Banking also has a strong impact on the overall banking performance,
- ii. The adoption of electronic banking has enhanced the fortune of the banks. This is achieved through electronic banking charges,
- iii. The electronic banking has improved the bank - customer relationship by rendering effective services 24hours, 7 days. Customers can now have access to their accounts outside working hours to make withdrawal to attend to their needs,
- iv. The electronic banking policy introduced by CBN strongly helps in effective electronic banking system. Withdrawal can be made anywhere at any time (using any bank ATM, mobile phones, personal computers). That, customers cannot withdraw more than some certain amount to allow other customers have access to cash and to help the implementation of the cashless policy. This also makes customers to exploit the range

of electronic banking products in meeting their needs. Generally, the electronic banking has made banking transaction to be easier by bringing services closer to their customers.

In line with the conclusion and major findings, and in order to give the growing trends of Information and Communication Technology (ICT) which involves net banking in the Nigerian DMBs a vision in the right directions, the following are recommended for further follow up:

- i. The banks must be focused in terms of their needs and using the right technology to achieve goals and objectives, rather, than acquiring technology of internet banking for having sake or because other banks have it.
- ii. Regulatory authorities like CBN (Central Bank of Nigeria) must enforce fully the new standards and policy, effective from June 2013, on the charges on electronic transactions. For example, charging #105 for ATM transactions to customers, yearly.
- iii. Lack of internet and technological knowledge, on the side of customers, is another major problem militating against the growth of e-banking in the country. Government must make right IT policy by ensuring that Computer, Communication equipments and other IT infrastructures, to a large extent, are manufactured in the country so that IT illiterates are considered, by making the equipments and infrastructures technological friendly. Also, government participation in ensuring focused telecommunication industry must be visible to reduce or remove avoidable costs of implementing internet banking.
- iv. To counter the threats and insecurity posed to net banking, like money laundering, fraud, among others, necessary legal codes backing the industry must be established and fully followed up as this will enhance the growth of the industry.

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