ELECTRONIC BANKING AND PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT

This study examined the impact of electronic banking on the performance of deposit money banks in Nigeria. The specific objective were; to examine the impact of ATM, POS, Internet and Mobile banking on the performance of deposit money banks, using return on equity (ROE) as a proxy. Data were sourced from secondary through CBN Financial Report, 2019. Descriptive statistics and correlation matrix were adopted in this study. The study revealed that ATM had a positive effect on the performance of deposit money banks, POS had no effect on the performance of deposit money banks and mobile banking also have a positive effect on the performance of deposit money banks. It is therefore recommended that regulatory authorities should enforce new standards and policy on the charges of electronic transaction and should be able to provide adequate security both physically and electronically to check the incidence of hacking fraudsters. Also recommended that mobile banking and internet services should be made accessible and easier to use in order to improve it popularity.

Keywords: Electronic banking, ATM, POS, Internet and Mobile banking, Return on equity (ROE)

INTRODUCTION

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. Similarly, Al-Smadi, and Al-wabel (2011) view 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 (Amedu, 2005).The adoption of electronic banking by deposit money banks has offered increased services to customers with a correspondent increase in customer risk exposure. 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. According to Basel committee on banking supervision, 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 wholesale banking services delivered electronically. The electronic revolution in banking basically centers on changes in the distribution channels of financial instructions. The basis for the emergence of the modern electronic distribution channels is the result of the evaluation of the concept of money. In the days of barter, the ability to pay for goods and service 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. Consequently, Nigeria bank's investments in information technology (IT) equipment have grown rapidly on the last 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 Nigerian Banking Industry. E-banking appeal as well as its product development is rapidly growing, and the global acceptance has strongly encouraged its penetration. The success of e-banking is contingent upon reliable and adequate data communication infrastructure. Therefore, it is efficient for banks to invest in electronic transactions through the creation of online banking platforms. However, there has been a mix up between electronic banking and internet banking. Banking has come a long way from the time of ledger cards and other manual filing systems, to handle their daily voluminous tasks of information retrieval, storage and processing.

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. Nigerian banks gravitation to electronic 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 more conveniently. Inspite of these efforts, there are problems militating against Nigerian banks from reaping the full benefit of electronic banking. There is incessant system break down and inconsistence services and the online connectivity. This has affected banks effectiveness and efficiency of operation with its attendant negative impact on their productivity and overall profitability. Similarly, banks are faced with system redundancy due to rapid technological changes resulting to excessive costs hence, lower profitability. The special objectives are; to examine the impact of ATM on the performance of commercial banks in Nigeria, .the effect of internet banking on the performance of commercial banks in Nigeria, ascertain the impact of mobile banking on the performance of commercial banks in Nigeria. and to determine the effect of POS on the performance of deposit money banks in Nigeria.

THEORETICAL FRAMEWORK

Theory of information production and contemporary banking theory

Diamond (1984) suggested that economic agents may find it worthwhile to produce information about possible investment opportunities if this information is not free; for instance surplus units could incur substantial search costs if they were to seek out borrowers directly. There would be duplication of information production costs if there were no banks as surplus units would incur considerable expenses in seeking out the relevant information before they commit funds to a borrower. Banks enjoy economies of scale and have expertise in processing information related to deficit units (borrowers). They may obtain information upon first contact with borrowers but in real sense it's more likely to be learned over time through repeated dealings with the borrower. As they develop this information they develop a credit rating and become experts in processing information. As a result they have an information advantage and depositors are willing to place funds with a bank knowing that this will be directed to the appropriate borrowers without the former having to incur information costs. Contemporary banking theory suggests that banks, together with other financial intermediaries are essential in the allocation of capital in the economy. This theory is centered on information asymmetry, an assumption that "different economic agents possess different pieces of information on relevant economic

variables, in that agents will use this information for their own profit". Asymmetric information leads to adverse selection and moral hazard problems. Asymmetric information problem that occurs before the transaction occurs and is related to the lack of information about the lenders characteristics, is known as adverse selection. Moral hazard takes place after the transaction occurs and is related with incentives by the lenders to behave opportunistically.

Determinant of financial performance

Ovia (2001) discovered that banking in Nigeria has increasingly depended on the deployment of information technology and that the IT budget for banking is by far larger than that of any other industry in Nigeria. He contended that the on-line system has facilitated internet banking in Nigeria as evidenced in some of them launching websites. He found also that banks now offer customers the flexibility of operating an account in any branch irrespective of which branch the account is domiciled. (Rose, 2001). Financial performance is a measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. There are many different ways to measure financial performance, but all measures should be taken in aggregation. Line items such as revenue from operations, operating income or cash flow from operations can be used, as well as total unit sales. Furthermore, the analyst or investor may wish to look deeper into financial statements and analyses margin growth rates or any declining debt. Ultimately the universal measure of business performance is profits and the ultimate forms of this measurement are the final accounts of the company. Profits have the advantage that it can be used to measure the effectiveness and efficiency not only of different business functions (marketing, engineering, production) but also compare different businesses or firms. Financial performance is positively related with size of company. Liquidity as studies done by Siam, (2006) proves that companies with more liquid assets are likely to perform better as they are able to realize cash at any point of time to meet its obligation and are less exposed to liquidity risks. By not having sufficient cash or liquid assets, companies may be forced to sell investment securities at a substantial loss in order to settle claims promptly. This in effect will affect their financial performance. Solvency margin of a firm similarly is a determinant of financial performance as it acts as a cushion to absorb the risk of conducting businesses. The capital or surplus is measured as the excess of assets over obligations. Companies with higher

solvency margin are considered to be more financially sound as it has more surpluses to cater for any unexpected losses. Although the Mobile banking money transfer models are providing financial services deep into rural areas where there are no banks, there is possibility that these models are insufficient when it comes to providing wider scope of financial needs of these people and subscribers are looking for more products, better service and better prices. More to this many of the targeted people in rural areas have no idea or little knowledge on both finance and information technology which could be limiting full exploitation of financial services being offered by ever changing mobile phone technology.

Bank Performance

By bank performance, generally it implies whether a bank has faired well within a trading period to realize its objectives. The only document that explains this is presumably the published financial statements, a fair evaluation of any bank's performance should start by evaluating whether it has been able to achieve the objectives set by management and stockholders. Certainly, many banks have their own unique objectives. Some wish to grow faster and achieve some long-range growth objective, others seem to prefer quiet life, minimizing risk and conveying the image of a sound bank, but with modest rewards to their shareholders Ordinarily, stock prices and its behavior are deemed to reflect the performance of a firm. This is a market indicator and may not be reliable always. However, the size of the bank, the volume of deposit and its profitability could be deemed as more reliable performance indicators. For the purpose of this study, profitability indicators, precisely the Return on Equity Capital (ROE) and the returns on Assets (ROA) are used to assess bank performance. These ratios are indicators of management efficiency, and rate of returns. According to Rose these profitability measures vary substantially over time and from one banking market to another. The ROE and ROA are popularly in use today. The amount of net income earned in relation to total assets is an indicator of how efficiently a company uses its economic resources. They further stressed that when the ROE is higher than the ROA, the company is favoured.

Empirical Literature

Chunks of empirical studies exist in the literature on the performance of banks adopting e-banking. The reason is that e-banking has cost and revenue implications and hence on the profitability of banks adopting it (Berger, 2003).

Onay, Ozsoz & Helvacýoðlu (2008) examined the impact of internet banking on banks' profitability of Turkish over the period (1995-2005). Contrarily, Malhotra and Singh (2009) examined the impact of internet banking on performance and risk tracing the experience of Indian commercial banks during June 2007 and found that that the profitability and offering of internet banking does not have any significant association, which was correspond to the findings of DeYoung (2005) and Arnaboldi and Claeys (2010). In addition, Mohammad and Saad (2011) examined the impact of electronic banking on the performance of Jordanian banks over the period (2000-2010) using OLS regression and found that electronic banking has a significant negative impact on banks performance which was similar to the findings of Siam (2006). Such classification is one of the simple and the most commonly used ones for the attacks performed over the online banking system (Peotta, Holtz, David, Deus & Sousa, 2011). On the other hand, Brar, Sharma and Khurmi (2012) categorized attacks into three main groups: remote, local and hybrid attacks. Remote Attacks don't modify the victim's machine but try to intercept or redirect the traffic of a session. Wei, Li, Cao, Ou and Chen (2012) also investigated fraud detection in e-banking, and reported three main types: Credit card fraud detection, computer intrusion detection and telecommunication fraud detection. In addition, they proposed and implemented an online banking fraud detection system, which takes advantage of domain knowledge, mixed features, multiple data mining methods and multiple layer structure for a systematic solution. Their approach and system were tested in a major bank, and showed that it is particularly effective in detecting fraud in large volume of extremely imbalanced data. Also, it performed better than existing fraud detection methods in both efficiency and accuracy.

Research Methods

The focus of this study has been on electronic banking and its contribution on the performance of deposit money banks in Nigeria. Research design is the approach or scheme which defines the tools and strategies of the research. In this study, the exploratory design is employed to identify the factors that contribute to electronic banking and its effect on the performance of deposit money banks in Nigeria. Secondary sources consists of already existing data used for some other work but were found to be useful is this study. Based on the objectives of the study the secondary sources are employed in this research. The study employed desk survey. Multiple regression model was employed to establish the relationship between dependent variable and independent variables. Based on this, the model below has been developed for the study.

ROA=F(ATM, INTB,MOB, POS)

Where;

ROA   - Return on asset

ATM   - Internet banking

INTB   - Mobile banking

POS   - Point of sales

Therefore, the functional relationship is linearized into ordinary least square (OLS) model.

$$ROA = bo + b1\ ATM + b2INTB + B3MOB + b4POS + Ut$$

Where

Dependent variable = ROA

Independent variable = ATM, INTB, MOB, POS

Regression constant   = bo

Regression parameter   = b_1-b_4

Stochastic error term   = Ut

DATA ANALYSIS AND INTERPRETATION

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.

Table 1 : Descriptive Statistics

	Mean	*SE*	*STD*	*VAR*	*RANGE*	*MIN*	*MAX*	*SUM*
Return onequity	21.258329	22.05	75.28	6,294.01	487.8	-222.8	265	376.04
ATM	22.89120	139.28	338.29	503,289.9	2007.39	36.08	2043.51	1619.9
POS	28.3258	12.21	48.03	3,421.38	174.33	0.01	174.32	593.13
Internet	17.3280	3.75	17.58	487.30	74.58	0	74.58	335.32
Mobile	20.273	10.28	63.28	4,392.98	205.9	0	201.3	546.81

Source: SPSS Output

From the above table, descriptive statistics is shown using explanatory variables. The result high standard deviation of ATM (338.29) indicates its lowest contribution to the performance of the deposit money banks in Nigeria. The internet has the lowest standard deviation of 17.58, and it is expected to have

the highest contribution to the performance of the deposit money banks in Nigeria. The Kurtosis reveals that data obtained for all the variable including dependent and independent variables are not abnormal. This indicates that the normally of the data substantiates the validity of the regression result.

Table 2: Correlation Matrix

	ROA	*ATM*	*POS*	*Internet (WEB)*	*MOBILE*
ROA	1	-0.08780	-0.04800	0.60384	-0.02958
ATM		1	0.844329	0.37821	0.87832
POS			1	0.37053	0.895328
Internet (WEB)				1	0.284329
MOBILE					1

Source: SPSS Output

The table shows the association between the explained and explanatory variables. It is presented that the variables are correlated well(between 0.37 to 0.89) and all were significant between 1percent to 10percent. Return on equity is 60percent positively related with internet, the greater the return on equity. It also shows that ATM is strongly negatively related to return on asset at 10percent levels of significantly indicating its lesser contribution to increasing the firm's return on Asset. Both POS and Mobile are negatively related with ROA by 48 percent and 20 percent respectively.

Table 3: Correlation Matrix

	ROE	*ATM*	*POS*	*Internet (WEB)*	*MOBILE*
ROE	1	-0.03786	-0.04266	0.603381	-0.02958
ATM		1	0.877547	0.349168	0.848312
POS			1	0.270516	0.995396
Internet (WEB)				1	0.259543
MOBILE					1

Looking at the pattern of association between the explained and explanatory variables, it shows that the variables correlates perfectly (between 0.27 t0 0.99) and all were significant between 1% to 10%. Thus there is no correlation coefficient that is particularly larger than 10%. Return on Equity is 60% positively related with Internet (WEB), the greater the Return on Equity. It also shows

that ATM is strongly negatively related to return on asset at 5% level of significant indicating its lesser contribution to increasing the firm's Return on Asset. Both POS and Electronic mobile are negatively related with Return on Asset by 4.2% and 2.9% respectively

Regression Analysis: ROA versus ATM, POS, Internet, mobile

Variables	Coefficient	t – statistics	P-Values
Constant	3.687593	2.403933	0.0247
ATM	0.957859	4.760852	0.0301
POS	-3.746	-2.260667	0.0336
Internet	10.00510	8.071236	0.0000
MOBILE	3.481684	3.733218	0.0410
R	0.601		
R2	0.709		
Adj. R2	0.515		
F – stat	4.378		
DW	1.801		

The cumulative R^2 (0.928) which is the multiple coefficient of determination gives the proportion of percentage of the total variation in the dependent variable explained by the explanatory variables. It significant that 92percent of the total variable in ROE ids caused by ATM, POS, Internet and mobile. This indicates that model fits the data and F-statistic (63.98) is well fitted. The study portrays electronic banking on the performance of deposit money banks in Nigeria. Based on the analysis, the study incorporated the following variables; ATM, POS, Internet and Mobile. This study has provided evidence that electronic banking has improved returns on the hypothesis tested. As revealed by the empirical result on return on equity. The findings of this result confirms to the works of scholars who posit that electronic banking positively affects the performance of deposit money banks in Nigeria.

SUMMARY OF FINDINGS

The major findings of the study include;

1. There is a significant relationship between ATM and performance of deposit money banks.
2. There is no significant relationship between POS and performance of deposit money banks.

3. There is a significant relationship between internet and performance of deposit money banks.

4. There is a significant relationship between mobile and performance of deposit money banks.

CONCLUSION/RECOMMENDATIONS

This study investigated the returns on equity of Nigeria banks following the adoption of electronic banking in Nigeria. Nigeria is a developing country advancing in the use of electronic banking for its banking operations. 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 appeals as well its product development is rapidly growing and the global acceptance has strongly encouraged its penetration. The success of e-banking is contingent upon reliable and adequate data communication infrastructure. It is concluded that ATM, POS, Internet and Mobile has impact on the performance of deposit money banks in Nigeria. The following recommendations are in line with the findings;

1. The regulatory authorities should enforce new standings and policy on the charges of electronic transaction and should be able to provide adequate security both physically and electronically to check the incidence of hacking fraudsters.

2. The bank management should from to time train customers with regard to electronic banking.

3. Mobile banking and internet services should be made accessible and easier to use to improve it popularity

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