**THE IMPACT OF INTERNET BANKING SERVICES EXPENDITURE ON THE PROFITABILITY OF COMMERCIAL BANKS IN NIGERIA**

**ABSTRACT**

This study is aimed at ascertaining the impact of internet banking services expenditure on the profitability of commercial banks in Nigeria; with the focus on Diamond Bank Plc. Internet technology holds the potential to fundamentally change banks and the banking industry. Its objective is to examine the relationship between mobile banking service expenditure and the profitability of Diamond bank plc.It helps to know whether or not there is a significant relationship between mobile banking service expenditure and the profitability of commercial banks.Information for this study is gathered from the annual reports of the Diamond Banks.The design for the study is ex-post-factor research design. A regression analysis was prepared and data obtained.The result reveals that there exists a positive and significant relationship between the log of internet banking services expenses and the return on assets.Based on the following findings of this study,the following policy recommendations are suggested: The empirical results of the study have revealed significant relationship between the log of internet banking services expenses(IBSE) and return on asset (ROA).We therefore, advocate for more ATM facilities which should be placed at strategic location for easy access.

ABSTRACT

CHAPTER ONE

INTRODUCTION

1.1 Theoretical Background

1.2 Statement of the Problem

1.3 Aims and Objectives of the Study

1.4 Significance of the Study

1.5 Scope of the Study

1.6 Organization of the Research

1.7 Definition of Terms

CHAPTER TWO

REVIEW OF THE RELATED LITERATURE

2.1 Introduction

2.2 Conceptual framework.

2.3Theoretical Framework

2.4 Empirical Review

2.5 Summary of Literature Review

CHAPTER THREE

METHODOLOGY

3.1 Introduction

3.2 Research Design

3.3 Nature and Sources of Data

3.4 Return On Assets (ROA), Return On Equity(ROE) and Margin

3.5 Return on equity

3.6 Model Specification

CHAPTER FOUR

4.0 PRESENTATION AND ANALYSIS OF RESULT

4.1Evaluation Based On Economic Criteria

4.2 Evaluation Based On Statistical Criteria

4.3 Student t-Test

CHAPTER FIVE

SUMMARY, POLICY RECOMMENDATIONS AND CONCLUSION

5.1 Summary

5.2 Policy Recommendations

5.3 Conclusion

REFERENCES

**CHAPTER ONE**

**INTRODUCTION**

Thousands of banks perform millions of monetary transactions every day and thousands of users follow almost the same banking system. the number of users increases more banks and more staff; are needed it means more money has to be put this system. If advanced computerized based banking system is developed, so there is no need to open new branches in remote areas or same branch provides services to other banking system example ATM system.

 Banking system requires authenticity and validity if a system provides these basic logic that mean we can developed a new system that authenticate and validate the user and user can do any type of virtual or monetary transaction any time any where in minimum amount of time. One of the most authentic codes for recognition of any person is signature. It always appear on almost all types of documents, such as property documents, bank cheques, and credit slips, thus signature has a great importance in our daily life, therefore automatic signature verification is important in the field of document analysis and processing for which a lot of work has been done in the past.

 Online monetary transaction system allows customers of financial institutions to conduct financial transactions on secure website operated by the institution, which can be a retail or virtual book, credit union or building society. To access a financial institution’s online banking facility; a customer having personal internet access must register with the institution for the services, and setup some password (under various names) for customer verification.

 Financial institutions new routinely allocate customers number (also under various names), whether or not customers intend to access their online monetary transaction system facility. Customer numbers are normally not the same as account numbers, because more than one account numbers can be linked to one customer number. The customer will link to the customer number.

 To access online banking, the customer would go to the financial institution’s website, and enter the online banking facility using the customer number and password. Some financial institutions have setup additional security steps for access, but there is no consistency to the approach adopted.

 Net banking offers an inexpensive alternative to banking to expand a bank’s customer base and many banks are using online banking to increase the quality of services to their customers. Many banks have opened websites on the internet and many plan to offer banking services over the internet.

**1.1 Theoretical Background**

 Today, it is believed that the application of computer technology in any activity would go a long way in making that activity much easier. To the researcher, this statement remains a theory until proven otherwise by online evolution system for monetary transaction.

 It is also believed that the benefits and advantages of using computers outweighs that if the manual methods. This is also wants to be proven beyond all doubts by the researcher through the implementation of the new system.

**1.2 Statement of the Problem**

 This research work is carried out to design or rather computerize the online evolution system for monetary transaction, the expected computerized system aimed at the ending of this work after critical study made up of problems, needs, requirements and specification of Diamond Bank, Uyo.

**1.3 Aims and Objectives of the Study**

 This study to a large extent will influence the existing system of operation. A critical analysis of the present method will be made and factors affecting it will also be determined.

 The aims of this study cannot be overemphasized as its usefulness will cut across Uyo. All activities carried out by the entire department are tailored towards the proper functioning of the monetary transaction system.

 In other words, the proposed system to be a arrived at as the output of the study will among others aid in the followings:

1. To examine the relationship between mobile banking service expenditure and the profitability of Diamond bank PLC.

ii. To examine the relationship between Automated Teller Machine service expenditure installed and the profitability of Diamond Bank PLC.

iii. To examine the relationship between credit or debit card issued to customers service expenditure and the profitability of Diamond Bank PLC.

**1.4 Significance of the Study**

 This research project would be unnecessary if it has no significant to humanity.

 Firstly, the newly designed system would make customers of Diamond Bank Uyo, to check their account balance anywhere they are by the use of the internet connection.

 Secondly, the knowledge that the new system has designed would help customers to create fixed/recurring deposits.

 Thirdly, the new system would also aid customers to transfer funds to other accounts of the same bank.

 Fourthly, the design of the system would provide jobs for system analyst and programmers contracted to build the system for other banks.

 Finally, the research work would serve as a reference material to other scholars interested on further research on the Net banking system.

**1.5 Scope of the Study**

 This research project is restricted to online evolution system for monetary transaction using Diamond Bank as a case study. Data used for the study which include opening of Account, Deposit of fund, withdrawal of funds and transfer were gathered from this source.

 The internet provides a secure medium for transferring funds electronically between bank accounts, and also for making banking transaction over the internet. All banking activities that were conventionally carried out by visiting the bank can now be done through a computer with internet access. Credit cards transactions are a form of online transaction.

 With online monetary transaction, you cannot only view your account balance but also open Fixed Deposit, transfer funds, pay your electricity telephone or mobile phone bills and much more.

**1.6 Organization of the Research**

 The research project has been arranged in the following order:

 Chapter one contains introduction, theoretical background, statement of the problem, objective of the study, significance of the study, scope of the study, organization of the research and definition of terms.

 Chapter two focuses on the relevant literature review which highlights the basic concept of the study.

 Chapter three is concerned with the research methodology, system design, input format and program flowchart and output format.

 Chapter four contains the system implementation and programming environment, which gives the direction of the system and analysis of the modules.

 Chapter five summarized and conclude the research work, stating the constraints of the study and some useful recommendations.

**1.7 Definition of Terms**

Net – Banking: This refers to a numbers of ways in which customers can access their bank without having to be physically present in the banking environment.

Bank: This is an institution offering certain financial services, such as the safe-keeping of money, conversion of domestic into and from foreign currencies, lending of money at interest, and acceptance of bills of exchange.

Implementation: This is the building of systems and installation to ensure that is solve a particular task.

Cheque: This is a bill of exchange drawn on a bank by the holder of a current accounting payable into bank account, if a crossed or on demand, if uncrossed.

Deposit: This is a process whereby money or valuable thing is placed in a bank on similar institution for safekeeping based on pre-defined interest.

Cash: This is a bank note or coins, example in-hand or readily available; money

**CHAPTER TWO**

**REVIEW OF THE RELATED LITERATURE**

**2.1 Introduction**

This chapter helps in providing the background of the context of the research problems. It reviews the existing literature on the effect of internet banking on profitability of commercial banks. We are going to review the following on this chapter: the conceptual framework, theoretical framework, empirical review and the summary of literature review.

**2.2 Conceptual framework.**

Internet banking is the use of internet in order to provide services like on line transfer, payment of bills and any other on line banking activity. Internet banking can be grouped into four major classes;

a)Telephone banking: this is a form of internet banking which is used by customers in order to perform or carry out retail transactions by calling phone communication units which are linked to an automated system of bank. Some activities that can be carried out are change of pin and transfer of funds.

b)Internet banking: this is also another form of banking which allows customers to make use of the bank’s website in order to make transfers, pay bills, view their bank statement without having to visit the banking hall.

c)Mobile banking: this is a form of internet banking which involves the use of cell or mobile phones in order to settle some transactions. Some of the examples of this transactions includes; change of pin, transfer of little amount of funds, phones recharge.

d) Electronic card: this is a form of internet banking is a physical plastic card that identifies the holder of the card. It is used for financial transactions on line which includes point-of-sale (POS)and Automated Teller Machine (ATM)which are used to authorize payments to the sellers. The various types of this cards include; credit and debit cards which have to be replenished.

Cyber-Crimes Threats on the Nigerian Banking Premises:

One of the most popular internet frauds is the 419 act. This had its origin from Nigeria in the 1980s. 419 crimes became consistent through the use of e-mail and other internet means (Amedu, 2005). In the year 2015, Nigeria ranked the third in global internet crimes behind the United Kingdom and United States of America with about 127 billion naira as the estimated loss.

There are many factors responsible for the above situation. They include; weakness of the existing legislative institutions to enforce relevant laws on cyber-crimes; continuous unemployment among graduates, a huge gap between the rich and the poor due to poor governance.

**2.3Theoretical Framework**

This helps in the examination of theories on the areas of investigation. This study seeks to establish the impact of internet banking on profitability of commercial banks in Nigeria.

Importance of Internet Banking

Internet banking will enhance the quality of life in the following ways;

a) Increased sales

b) Quick transactions-this reduces queues at points-of-sale.

c) Cash collection made simple-time spent on collecting, counting and

d) Sorting cash is eliminated.

As a policy instrument, CBN has heaped a lot of praises on the cashless system. It is a tool for tackling money laundering, corruption, it has been pointed out that, among the reasons glibly advanced by the Central Bank of Nigeria for this policy includes reducing the cost of cash management in 2009 cost 114.5 billion naira and this is projected to stand at 200 billion naira in 2020.

**Liquidity ratio**

According to Devinaga Rasiah (2010) commercial banks are required by regulators to hold a certain level of liquidity assets and the reason behind this regulation

is to make sure that the commercial banks always possess enough liquidity in order to be able to accumulate enough cash and have in possession other liquid assets as well as having the ability to raise funds quickly from other sources to be able to meet its payment obligation and other financial commitments on time.

**Deposits**

Deposits consist of money placed in the banking institutions for safekeeping by the public. Banks are said to depend heavily on loans being offered to customers. There is a general notion that deposits are the cheapest sources of funds for banks and so to this extent deposits have positive impact on banks possibility if the demand for bank loans is very high. That is, the more deposits commercial bank is able to accumulate the greater is its capacity to offer more loans and make profit. One should be aware that if banks loans are not high in demand, having more deposits could decrease earnings and may result in low profit for banks. This is because deposits like Time, Fixed or Term deposits attract high interest from the banks to the deposits.

**Income**

Income is the consumption and savings opportunity gained by an entity within a specified time frame, which is generally expressed in monetary terms. Rasiah (2010) presented that banks generate income mostly on their asset and the asset could be termed as income and non income generating. With regards to commercial banks income Rasiah (2010) classified it into two namely interest and none interest income. The interest income consist of rate charged on loans, overdraft and trade finance which the banks offers to customers. Whereas, the non interest income is consisting of fees, commission, brokerage charges and returns on investment in subsidiaries and securities.

**Loan Quality**

As it has been mentioned above, one of the major roles of banks is to offer loans to borrowers and loans serve as one of the ultimate source of earnings for commercial banks. In other words loan represent one of the highest yielding asset on banks balance sheet. It is obvious that more banks offer loans the more it does generate revenue and more profit. But then banks has to be courteous in offering more loans because as they offer more loans to customers they expose themselves to liquidity and default risk which impact negatively on banks profit and survival; Rasiah (2010).

**Bank-Focused Theory**

This theory anchors on the premise that banks use non-traditional but conventional low-cost delivery channels to offer services to its customers. Such channels include the automated teller machines (ATM's), mobile phone banking, Point of Sale (POS) among others.

In using these channels, the bank offers a wide range of services to its customers regardless of location and branch attachments. All that is required is to enter the needed information into the system and the transaction is done. This theory favours this study since the emphasis here is on electronic platforms as means of delivering services.

**Bank-Led Theory**

The bank-led theory of branch less banking was postulated by Lyman, Ivatury and Staschen (2006) and emphasizes the role of an agent who acts as a link between the banks and the customers.In this case the retail agents have direct interaction with the banks customers and the perform the role expected of the bank by either paying cash or collecting deposits.Finally, this agent is expected to transmit all his dealings with the banks customers to the bank he is representing through electronic means(such as phones, internet, etc.).

**Non bank-Led Theory**

This theory was popularized by Hogan (1991). Here customers do not deal with any bank and they do not maintain any bank account. All that the customers have to deal with is a non-bank firm such as mobile network operator or prepaid card issuer who they exchange their cash with for e-money account. The e-money account is then stored in the server of this non-bank agent. This tends to represent the most risky platform in the electronic payment methods because of lack of existing regulatory framework upon which these e-agents operate.

**Theory of Planned Behaviour**

The theory of planned behaviour (TPB) suggested that a human behaviour is determined by intention to perform the behaviour, which affected jointly by attitude toward behaviour, subjective norm and perceived behavioural control (Ajzen, 1991). Attitude (ATT) is the general feeling of people about the desirability and undesirability of a Subjective norm (SN) expresses the perceived organizational or a social pressure of a person who intends to perform a specific behaviour.

**Social Construction Theory**

The most relevant theory for analysing internet banking is that of Trevor Pinch and Wiebe Bijker’s social construction of technology theory. The theory argues that technology does not determine how and in what ways technology is used.

**Theory of Reasoned Action(TRA)**

This theory shows that an individual’s adoption of an innovation is affected by so many things such as subjective norm and his attitude towards the behaviour. Subjective norm is simply the belief of what others will think of the behaviour. Altitudes are those beliefs a person accumulates throughout his life time.

**2.4 Empirical Review**

This review is concerned mainly with relevant practical applications of the theoretical underpinnings. Bello and Dogarawa (2005) examined and accessed the impact of internet banking services on customers satisfaction in Nigeria banking industry. The result of their study shows that many bank customers in Nigeria are fully aware of the positive development in information technology and communication which led to new delivery channel for commercial banks product and services in Nigeria. Banks traditionally have always sort medium through which they will serve their clients more cost-effectively as well as augment the benefit to their clientèle. Their core concern has been to serve clients more conveniently and in the process increase profit and competitiveness thus banking in Nigeria embracing the influx of e-banking. Improvement in Information and Communication Technology in Sub-Saharan Africa are rapidly changing the way business is conducted.Agboola (2001) also stated the impact of computer automation on banking services in Lagos using six banks and concluded that internet bank has tremendously improved customer services. Egland et al (1998) was the first important study, which estimated the number of US banks offering electronic banking and analysed the structure and performance characteristic of these banks. It found no evidence of major difference in the performance of the group of banks offering electronic banking activities compared to those that do not offer such services in terms of profitability, efficiency or credit quality. However transactional electronic banks differed from other banks primarily by size.

According to Centeno (2004), the internet adoption factors are divided into two categories:i). Factors relating to the infrastructure and accessing technology, ii). Factors that are related to retail banking factors. The prior factors include skills on the part of consumers in using internet and other related technologies, attitudes towards technologies, internet penetration rate privacy and security concerns. Later involves factors like banking culture, internet culture, trust in banking institutions and internet banking push. However, lack of PC and internet penetrations serve as barriers for development of e-banking. Also,in their study conducted in Turkish retail banking sector Polatoglu and Ekin (2001) concluded that internet decreases operational costs and it amplifies customers satisfaction retention.

Abaenewe et al (2013) from their analysis of effect of internet banking has significantly impact on return of equity.Beck et al,(2005) in assessing the effect of privatization of Nigerian banks from 1990-2001,controlled for the age of the banks ,since longer established banks might enjoy performance advantages over relative newcomers.Their results for the Nigerian market indicate that older banks did not perform as well as newer banks,which were better able to pursue new profit opportunities.

Sathye (2005) investigated the impact of the introduction of transactional internet banking on performance and risk profile of major credit unions in Australia.Similar to the result of Sullivan (2000), the internet banking variable didn't show a significant association with the performance as well as with operating risk variable. Thus, internet banking didn't prove to be a performance enhancing tool in the context of major credit unions in Australia. It is neither reduced nor enhanced risk profile.

Mahotra & Singh (2007) examined the impact of internet banking on banks performance and risk in India.The study examined comprehensive set of 10 measures of financial performance that made it possible for the authors to critically look into banks performance. By developing a deeper understanding of these phenomena, the researchers drew more insightful inference about the impact of the internet on banking on business strategies and performance.The results of the study revealed that on average, internet banks are more profitable than non-internet banks and are operating with lower cost as compared to non-internet banks, thus, representing the efficiency of the internet banks.

The reasons of lower profitability of these banks were pointed out to be higher cost of operations, including fixed cost and labour cost. Gakure and Ngumi (2013) studied the influence of innovations in profitability of commercial banks, and concluded that bank innovations have a moderate influence on profitability of commercial banks in Kenya.

The analysis produced a coefficient of determination of 47.8% which showed the percentage of variations in profitability which is explained by bank innovations Siam (2006) examined the impact of e-banking on Jordanian banks and concluded that majority of the bank are providing services on internet through their website and his findings showed that the attention was more to achieving e-banking as satisfying and fulfilling Customers needs. He also concluded that there should be a well articulated strategy to achieve success and profit in the long run. Hernado and Nieto(2005), examine the performances of multi channel banks in Spain between 1994 and 2002. The result was that internet as a delivery channel have a positive impacts on banks profitability after one and half years of being used. Onay et al (2008) conducted a research on Turkish banks and concluded that e-banking has a positive impacts on the profits of banks.

According to the study, “Internet has changed the dimensions of competitions in the retail banking sector. It has also provided opportunities for emerging countries to build up their financial intermediation infrastructure. The e-banking variable has had a positive effect on the performance of the banking system Turkey. Gao and Owolabi (2008) investigated the factor that influence the customers adoption of internet banking in Nigeria. They reported that the level of awareness or attention, convenience, privacy, availability of knowledge are the relevant issues that needs to be considered in determining the adoption of internet banking in Nigeria.

Using information drawn from banks in Italy, Hasan et al. (2002) found that the Internet banking institutions were performing significantly better than the non- Internet groups. Additionally, the risk variables associated with the Internet group continued to be lower relative to the non-Internet group. The asset-liability variables revealed that on average the banks in this Internet group were larger and had significantly higher trading and investment activities and less dependent on retail deposits (both demand and saving deposits) relative to the non-Internet group. The only category where the Internet group showed a lower performance was the no interest expense category. It found a significant and positive link between offering of Internet banking activities and banks profitability and a negative but marginally significant association between the adoption of Internet banking and bank risk levels particularly due to increased diversification.

Several literatures exist on the nexus between electronic banking and performance of banking sector. However, only a few of such literature pertains to Nigeria and they are mostly descriptive analysis. For instance, Furst, Lang and Nolle (2002) examined the influence of internet banking on profitability amongst United States national banks. The study considered large banks in urban areas and their counterparts in the localities. Findings revealed that bank profitability has a strong correlation with internet banking in all US national banks. However, the study emphasized that in large banks in the urban areas, bank profitability has no relationship with internet banking because those banks merely use internet banking for competition purposes and not for profit making.

Mahotra and Singh (2009) studied the impact of internet banking on Indian banks performance and found that there is no significant association between adoption of internet banking by banks and their performance. They also concluded that internet banking has a negative and significant impact on profitability of private sector banks particularly new private sector banks.

Hasan, Maccario and Zazzara (2005) investigated the impact of internet banking on the performance of commercial banks in Italy. Hasan et al (2005) adopted return on assets (ROA) and return on equity (ROE) as performance indicators. Findings showed that internet banking has significant effect on both ROA and ROE of commercial banks in Italy. Hence, the study concluded that internet banking significantly affects commercial banks performance in Europe. Onay, Ozsoz and Helvacioglu (2008) investigated the impact of internet banking on the performance of commercial banks in Turkey from 1996 to 2000. The study adopted a sample of 14 commercial and savings banks and the profitability measures include return on assets (ROA), return on equity (ROE) and Margin of Interest which served as the dependent variables. Findings revealed that (i) In the first year of adopting internet banking, there is no positive performance between internet banking and profitability of commercial banks. (ii) In the second and third years, some improvements in performance were seen such that return on equity (ROE) had a positive and significant relationship with internet banking. However, return on assets (ROA) had a positive but insignificant relationship with internet banking.

Francesca and Peter (2008) conducted a comparative analysis of the effect of electronic banking on performance in four European countries namely UK, Spain, Finland and Italy. The study adopted panel data method from 1995 to 2004 using 46 banks. The dependent variables were return on assets (ROA) and return on equity (ROE). Findings revealed that banks involved in only on line banking services and those involved in mixed internet banking services do not have any clear differences. However, the study showed that internet banking has a significant effect on both return on assets (ROA) and return on equity (ROE).

Nnolim(2013) examined the impact of information and communication technology ICT on the banking sector using Access Bank PLC as a case study, the findings of this study costs that ICT has influenced operational cost if banks in terms of personnel administration and management.

Njuru (2007) did a study on the challenges of implementing electronic banking strategy by commercial banks in Kenya.The objective of the study was establishing the challenges inhibiting electronic banking implementations and how banks are responding to these challenges and the responses that organizations employ in strategy implementation and the extent of electronic banking in Kenya commercial banks.The banks have thus employed strategic responses to overcome these challenges with some of these responses being more popular than the rest depending on the impact they have on the implementation process. Lack of required infrastructure,resources and specialized skills,commitment from the senior management team and fear of adopting the system by both the bank employees and customers were some of the popular responses that banks have been using.The entire internal and external environment however needs to be considered during the implementation of the electronic banking strategy

De Young(2005) analysed the performance of internet only banks versus the bricks and monitors in the US market and find strong evidence of general experience effects available to all start-up. However in a later study De young et al(2007)analysed the US community banks market to investigate the effects of internet banking on banking performance.Sullivan (2000) found that click and mortar banks in the 10th Federal Reserve District incurred somewhat higher operating expenses but offset these expenses with somewhat higher fee income. On average,this study found no systematic evidence that banks were either helped or harmed by offering the internet delivery channel. Bourke (1989), Demirguc-Kunt, Abreu and Mendes (2002), Goddard et al. (2004), Naceur and Goaied (2001), and Pasiouras and Kosmidou (2007) indicate that banks that hold a high level of equity relative to their assets perform better in terms of profitability.These studies suggest that as banks capital ratio increase,the cost of funding tend to fail due to lower perspective bankruptcy costs.

Olasope (2013) investigated the effects of internet banking on commercial bank operation in Nigeria using primary data derived from questionnaire and oral interviews. In the findings of Aderonke and Charles (2010) it was discovered that ATM(Automatic teller machine) is still the most common form if internet banking.

Ogini, Mohammed, El-maude and Gambo (2013), did a study on e-banking and bank performance:evidence from Nigeria.The study examined the impact of electronic banking on banks performance in Nigeria.Panel data comprised audited financial statements of eight banks that have been adopted and retained their brand name banking between 2000 and 2010 as well macroeconomic control variables were employed to investigate the impact of e-banking on return on assets (ROA),return on equity (ROE) and net interest margin (NIM). Result from pooled OLS estimations indicate that e-banking begins to contribute positively to bank performance in terms of ROA and NIM with a time lag of two years while a negative impact was observed in the first year of adoption.It was recommended that investment decision on electronic banking should be rational so as to justify cost and revenue implementation on bank performance.

**2.5 Summary of Literature Review**

The evidence of the impact of this adoption of internet as a delivery channel of financial performance is mixed at both sides. With the use of this websites, customers can now carry out some transactions such as; payment of bills, receive funds, check account balance, apply for loans without having to leave their place of work.

**CHAPTER THREE**

**METHODOLOGY**

**3.1 Introduction**

Methodology is simply the use of activities that are involved in collecting the information required for a research work. This chapter describes how the study was carried out by showing the procedures and methods for the research and collection of data for the study. It includes the research design, nature and sources of data, model specifications .

**3.2 Research Design**

The research design that is used in this study is the ex post-facto research design which is aimed at establishing the impact of one variable and another.

**3.3 Nature and Sources of Data**

The nature of data analysis for this study is secondary data and the data for this study was derived from Diamond Bank Annual Report from 2005-2017.

**3.4 Return On Assets (ROA), Return On Equity(ROE) and Margin**

These have been used in most studies and it will also be used for this study. These measures are the return on assets and the return on equity. Bain(1956) used the return on equity (ROE) as a measure of profitability on the grounds of data availability although he preferred the return on assets. Other researchers have also argued for the use of ROA (Stigler,1963). Hall and Weiss (1967) developed an argument in favour of ROE that ROA will differ among industries due to the existence of an optimal borrowing level. ROE tends to be equal among industries, thus providing a better comparative figures. In this study both ROE and ROA were used for measuring profitability as we worked in the same sector.

**3.5 Return on equity**

Return on Equity also known as, Return on Net Worth, measures how effectively a company has used the owner’s resources (Anyanwuokoro, 2008).

It is used as a measure of performance or profitability of the commercial banks in the study. Return on equity is described in the study as:

ROE = Profit after tax ÷ Shareholders fund or Profit after tax ÷ Total equity

**3.6 Model Specification**

In this chapter, regression analysis was used. The importance of this regression is to use mathematical equation to express the nature of the relationship that exists between variables. Simple regression technique is used to capture the relationships between (i) internet banking services expenditure and ROA, (ii) internet banking services expenditure and ROE as well as (iii) internet banking services expenditure and NIM.The model specification is as follows:

ROA=F(IBSE)-------------(1)

ROE=F(IBSE)-------------(2)

NIM=F(IBSE)-------------(3)

The mathematical function is as follows:

ROA=Bo + B1InIBSE + ------(4)

InROE=Bo + B1InIBSE + -----(5)

InNIM=Bo + B1InIBSE + -----(6)

.Where:

ROA=Return on assets

ROE=Return on equity

NIM=Net income margin

IBSE=Internet Banking Service Expenditure

Bo=the intercept

B1=the slope

 =Error term

**CHAPTER FOUR**

**4.0 ​PRESENTATION AND ANALYSIS OF RESULT**

The results of the ordinary least squares regression (OLS) are presented as follows:-

**Table 4.0.1 Regression Result: The Impact of Internet Banking on the Profitability of Commercial Banks. :**

Dependent Variable: ROA

|  |  |  |  |
| --- | --- | --- | --- |
| Variable  | Coefficient  | Std. Error | t-stat. |
| Constant | -43.77038 | 8.185200 | -5.347503 |
| LIBSE | 4.919882 | 0.848850 | 5.795936 |

 R2 = 0.753324

**Source : Author’s computation with SPSS software**

**Table 4.0.2 Regression Result: The Impact Of Internet Banking On The Profitability of Commercial Banks**

Dependent Variable: ROE

|  |  |  |  |
| --- | --- | --- | --- |
| Variable  | Coefficient  | Std. Error | t-stat. |
| Constant | -5.300563 | 1.698732 | -3.120307 |
| LIBSE | 0.859224 | 0.176168 | 4.877303 |

 R2 =0.683800

**Source : Author’s computation with SPSS software**

**Table 4.0.3 Regression Result : The Impact Of Internet Banking On The**

 **Profitability Of Commercial Banks**

Dependent Variable: NMG

|  |  |  |  |
| --- | --- | --- | --- |
| Variable  | Coefficient  | Std. Error | t-stat. |
| Constant | 0.619957 | 1.036671 | 0.598027 |
| LIBSE | 0.378053 | 0.107508 | 3.516493 |

 R2 =0.529225

**Source :Author’s computation with SPSS software**

**4.1​Evaluation Based On Economic Criteria**

The OLS regression applied the Log Linear Model in order to determine the relative change in the dependent variable from a relative change in each of the explanatory variables.

The result has established a positive and significant relationship between the log of internet banking services expenses (IBSE) and return on asset (ROA). This has been found to be consistent with economic theory.

The result also revealed a positive and significant relationship between log of internet banking services expenses (IBSE) and return on equity (ROE). This has been found to be consistent with the theory.

Lastly, the result also revealed a positive and significant relationship between log of internet banking services expenses (IBSE) and net income margin (NMG). This has been found to be consistent with the theory.

**4.1.0​Summary of the Sign**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable  | Expected Sign | Realized Sign | Remark  |
| IBSE | Positive  | Positive  | Conforms |

**4.2 Evaluation Based On Statistical Criteria**

Coefficient of Determination (R2) of model I

This measures the goodness of fit of the regression model. It shows how the variation in the dependent is explained by explanatory variables, from the table, R2=0.753324. This implies that about 75% variation on return on asset (ROA) is explained by the explanatory variable (IBSE).

Coefficient of Determination (R2) of model II

From the table, R2 =0.683800. This implies that about 68% variation on return on equity (ROE) is explained by the explanatory variable (IBSE).

Coefficient of Determination (R2) of model III

From the table, R2 =0.529225. This implies that about 52% variation on net income margin (NMG) is explained by the explanatory variable (IBSE).

**4.3 Student t-Test**

This test the explanatory power of the Independent variables; the result shows that the internet banking service expenses (IBSE) has a significant impact on return on assets (ROA). This is because its absolute t-statistic of 5.795936 is greater than the critical t-statistics of 2.042 at 5% level of significance. Its coefficient of 4.919882 implies that a percentage increase in internet banking service expenses will increase the return on assets by 4.919882percent.

Again, the variable internet banking service expenses (IBSE) has a significant impact on return on equity (ROE). This is because its absolute t-statistic of 4.877303 is greater than the critical t-statistics of 2.042 at 5% level of significance. Its coefficient of 0.859224implies that a percentage increase in internet banking service expenses will increase the return on equity by0.859224 percent.

Lastly, the variable internet banking service expenses (IBSE) has a significant impact on net income margin (NMG). This is because its absolute t-statistic of 3.516493 is greater than the critical t-statistics of 2.042 at 5%

level of significance. Its coefficient of 0.378053 implies that a percentage

increase in internet banking service expenses (IBSE)increases net income margin (NMG) by 0.378053percent.

**CHAPTER FIVE**

**SUMMARY, POLICY RECOMMENDATIONS AND CONCLUSION**

**5.1 Summary**

In this study, we set out to empirically evaluate the impact of internet banking on the profitability of Commercial Bank of Diamond Bank Plc. In Nigeria. The study was conducted to ascertain how internet banking affects Diamond Bank Plc in Nigeria.

Secondary data were used; the source of data included Diamond Bank Plc. annual financial statement (2017). In order to achieve the objectives of the study, three econometric models were formulated using the Ordinary Least Square (OLS). In the first model, return on assets was regressed on internet banking service expenses. In the second model, return on equity was regressed on internet banking service expenses and in the third model, net income margin was regressed on internet banking service expenses.

The major findings of the study are summarized below:

1. The result has established a positive and significant relationship between the log of internet banking services expenses (IBSE) and return on asset (ROA). This has been found to be consistent with the theory.

2. The result also revealed a positive and significant relationship between log of internet banking services expenses (IBSE) and return on equity (ROE). This has been found to be consistent with the theory.

3. Lastly, the result also revealed a positive and significant relationship between log of internet banking services expenses (IBSE) and net income margin (NMG). This has been found to be consistent with the theory.

**5.2 Policy Recommendations**

Based on the following findings of this study, the following policy recommendations are suggested:

1. The empirical results of the study have revealed significant relationship between the log of internet banking services expenses (IBSE) and return on asset (ROA).We therefore, advocate for more ATM facilities which should be placed at strategic location for easy access.

2. Marketing and education of internet banking service and products should be intensified to attract more customers which enhances profitability.

3. The bank should conduct more research to find new internet banking product to attract and to retain her potential customers.

4. Diamond bank should improve and modernize its policies by ensuring that communication equipment , computer and other infrastructure to a large extent are managed by qualified staff to ensure that customer enjoy better internet experience.

5. The government should through the monetary authority provide policies that would enable commercial bank thrive in order to boost the financial sector of the economy.

**5.3 Conclusion**

 In this study, we evaluated the impact of internet banking on the profitability of Commercial Bank of Diamond Bank Plc. in Nigeria. From our findings, a positive and significant relationship was established between return on asset (ROA), return on equity (ROE), net income margin (NMG) and internet banking service expenses (IBSE).

The general conclusion is that internet banking service expenses (IBSE) have impact on return on asset (ROA), return on equity (ROE) and net income margin (NMG).

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