

**EFFECT OF INTERNET BANKING ON THE  
PROFITABILITY OF DEPOSIT MONEY BANKS  
IN NIGERIA**

**(A Case Study of Zenith Bank Plc)**

**BY**

**KABIRU MUNIRUDEEN ALAAYA**

**HND/23/BFN/FT/0334**

**BEING A RESEARCH PROJECT SUBMITTED TO THE  
DEPARTMENT OF BANKING AND FINANCE, INSTITUTE OF  
FINANCE AND MANAGEMENT STUDIES, KWARA STATE  
POLYTECHNIC ILORIN KWARA STATE**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF THE AWARD  
OF HIGHER NATIONAL DIPLOMA (HND) IN BANKING AND FINANCE  
MANAGEMENT**

**MAY 2025**

## **CERTIFICATION**

This is to certify that this research study was conducted by **KABIRU**

**MUNIRUDEEN ALAAYA** with Matriculation Number

**HND/23/BFN/FT/0334** and this work has been read and approved as meeting the requirement for the award of Higher National Diploma (HND) in Banking and Finance, Institute of Finance and Management Studies (IFMS), Kwara State Polytechnic.

.....  
**DR. OLOWONIYI A.O**  
**(PROJECT SUPERVISOR)**

.....  
**DATE**

.....  
**MRS. OTAYOKHE E.Y**  
**(PROJECT COORDINATOR)**

.....  
**DATE**

.....  
**MR. AJIBOYE W.T**  
**(HEAD OF DEPARTMENT)**

.....  
**DATE**

.....  
**EXTERNAL (EXAMINER)**

.....  
**DATE**

## **DEDICATION**

This research work is dedicated to Almighty God, the most merciful, the most gracious, the beginning and the end for making this research a possible one.

I also dedicate this research work to my beloved family [**ALAAYA FAMILY**] whose constant support, encouragement and believe in me have been my greatest motivation.

## **ACKNOWLEDGEMENT**

All praises, adoration and glorification are due to Almighty Allah (S.W.T) the most gracious, the most beneficent, the most merciful and I seek his benevolent peace and blessing be showered upon his noble prophet Muhammad (S.A.W) his house hold, his companion and the entire generally of Muslim till the day of judgment (Amen).

I would like to express my profound gratitude to my Parents [**MR. & MRS. KABIR ALAAYA**] whose unwavering support, guidance and sacrifices have been the bedrock of my academic pursuit. Your love, encouragement and wisdom have shaped me into what I am today. I am eternally grateful for the values you have instilled in me and for the sacrifices you have made to ensure my success. This project is a testament to your enduring influence in my life and I acknowledge you with all love and appreciation.

I express my sincere gratitude to my supervisor **Dr. OLOWONIYI A.O.** for his understanding, despite his busy and tight official schedule, he found this research work worthy of supervision. I equally place a record to express my sincere gratitude to my HOD **Mr. AJIBOYE W.T** and to the entire lecturers in my noble department, may God be with you all (Amen).

My heartfelt appreciation goes to all the benefactor who were there when no one was, **CHIEF ADEDAYO** and others. May God be with you.

My heartfelt appreciation also goes to all my friends who were there for me always [**Ridwan, Ola, Delish, Anu, Jem-Jem, Rahmat, e.t.c.**], I can't mention you all. I really appreciate you and may you never lack any good thing in life (Amin).

I also send appreciation to my friend **KELANI MUIZ**, my hommie **HEMJAY, OLAYEMI** and other Siblings. You are all appreciated.

## **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 Zenith 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 Zenith 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. 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.*

**Keywords:** *Internet Banking, Bank Profitability, Deposit Money Banks.*

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the Study**

The coming into existence of the internet has helped to greatly improve the operations of commercial banks in Nigeria. The delivering of electronic services to businesses and consumers has been going on for years now. The internet is a fast spreading service that allows customers to use computers or any of their internet enabled devices to access account-specific information and possibly conduct transactions from remote location such as at home quickly and successfully. Debit cards, credit cards, ATM cards seem to make life very easy because without them, today's life will be full of misery. In this recent time, retail banks are now offering their services mostly through their internet branches. Internet banking is simply an electronic payment system which helps customers of any financial institution or bank to conduct any transaction.

The introduction of these internet enabled devices brought increased enabled devices for competition in the banking industry, which has gone a long way to reducing customers waiting time for banking transactions. In Nigeria, this networking began with LAN (Local Area Network), MAN (Metropolitan Area Network) and later the WAN (Wider Area Network). The coming into existence of the internet banking has made transaction and data processing very accessible for quick management decision making. The rate of wholesale and retail banking services has been increased through internet banking. The prospects of reducing the cost of operations revenue actually is seen as a motivator in the investment in internet banking by banks according to Simpson, J. (2002).

However, on the other hand the adoption of internet banking has also brought notable challenge to the industries in terms of exposure of risk. Since the introduction of this system, it has been noticed that the volume of deposits has increased, and also the

fraudulent practices in Nigerian banks. That is the reason why Ovia, J. (2001) stated in the mid 1990s Nigeria's banking scene has witnessed phenomenal changes which can be seen in the enormous volume and complexity in service delivery or product liberalization of finance and process re-engineering in business.

In the recent time, it has been observed that a large number of literature have totally ignored the internet banking and compare electronic money with substitution of currency through electronic gadgets such as a virtual currency and smart cards. Internet banking is simply when devices are being used. For example, Freedman (2000) proposes that electronic money and internet banking is made up of three devices; access cards, stored value cards and network money. Electronic money is the sum of network money and stored value cards. The most fascinating about this view is that electronic money and internet banking are no longer processes but devices. (Shy and Tarkka 2002), (Santomero and Seater 1996) have presented models that identify conditions which alternative electronic payments substitute for cash. Banks, since the inception of the use of internet banking product in the late 1980's, have not made their presence to be felt much.

However, not many studies have been done on the profitability of commercial banks in Nigeria. The fact still remains that the reality of using IT in banks is necessitated by the huge amount of information being handled by these banks on a daily basis. The software used by banks is usually renewed on short term basis which incurs huge financial costs on banks. Capital providers expect that they would gain tremendous returns which may accrue from the project as information technology driven by the internet is adopted. Since the introduction of internet banking, Nigerian banks have been forced to invest more in assets in order to meet up its competitive positioning. Much earnings have been retained to meet up with this obligation which led to the denial of dividend for shareholders with expectation that the future dividend will be fatter. According to Basel committee on banking supervision,



internet banking is defined to include the provision of retail and small value banking product and services through electronic channels as well as large value electronic payment and other wholesale banking services delivered electronically.

## **1.2 Statement of the Problem**

Internet technology holds the potential to fundamentally change banks and the banking industry. An extreme view speculates that the internet will destroy old models of how bank services are developed and delivered (DeYoung 2001). The widespread availability of internet banking is expected to affect the mixture of financial services produced by these banks. In addition, industry analysis outlining the potential impact of internet banking on cost savings, revenue growth and risk profile of the banks have also generated considerable interest and speculation about the impact of the information technology on the banking industry.

However the fact that internet banking is fast gaining acceptance in Nigerian banking sector does not assuredly signify improved banks performance nor would conspicuous use of internet as a delivery channel make it economically viable, productive or profitable. This study sought to fill the exist research gap by answering the following research questions: does internet banking affect profitability of deposit money banks in Nigeria?

## **1.3 Research questions**

In the light of the objectives of the research, the following research questions were considered pertinent:

- i. What is the relationship that exists between mobile banking service expenditure and the profitability of Zenith Bank PLC?
- ii. What is the relationship that exists between Automated Teller Machine service expenditure and the profitability of Zenith Bank PLC?
- iii. What is the relationship that exists between credit or debit cards to consumers service expenditure and the profitability of Zenith Bank PLC?

## **1.4 Objectives of the Study**

The main objective of this study is to examine the impact of internet banking on profitability of commercial banks in Nigeria, using Zenith bank PLC as a case study.

Other objectives are:

- i. To examine the relationship between mobile banking service expenditure and the profitability of Zenith bank PLC.
- ii. To examine the relationship between Automated Teller Machine service expenditure installed and the profitability of Zenith Bank PLC.
- iii. To examine the relationship between credit or debit card issued to customers service expenditure and the profitability of Zenith Bank PLC.

## **1.5 Research Hypothesis**

H<sub>0</sub>: There is no significant relationship between mobile banking service expenditure and the profitability of commercial banks.

H<sub>1</sub>: There is a significant relationship between mobile banking service expenditure and the profitability of commercial banks.

H<sub>0</sub>: There is no significant relationship between Automated Teller Machine service expenditure and the profitability of commercial banks

H<sub>1</sub>: There is a relationship between Automated Teller Machine service expenditure and the profitability of commercial banks.

H<sub>0</sub>: There is no significant relationship between credit or debit bank issue service expenditure and the profitability of commercial banks.

H<sub>1</sub>: There is a significant relationship between credit or debit bank issue service expenditure and the profitability of commercial banks.

## **1.6 Significance of the study**

With this study, commercial banks are able to understand banking in a new dimension. It will help to highlight the various importance of cashless banking and increase profitability if these measures are properly taken care of. This study has

helped to introduce a new model for commercial banks to adopt-the customer convenient model. This model will help the commercial banks in gaining more money, enlighten managers of commercial banks on how to serve customers and also better loyalty from customers.

### **1.7 Scope of the study**

This study is going to cover the POS (Point of Sale) and ATM channels which is in the internet banking investment and profit after tax on Zenith Bank PLC from 2005-2017. Other banks could not be covered due to their inadequate disclosure on internet banking investment.

### **1.8 Plan of the Study**

The research work is divided into five (5) chapters.

Chapter one is dedicated to the introduction and research context. Further relevant sections have addresses the statement of the problem, research questions, and the objectives of the study, significance of the study, scope and limitation of the study. Chapter two, is devoted to literature review, various views from different authors were reviewed as regards the effect of interest on loan repayment on MFIs and definition of variables. Chapter three concentrates on the methodology of the research. Chapter four focuses on the Findings, Analysis and Discussions of Results. Chapter five covers the summary, conclusion and recommendations.

### **1.9 Definition of Terms**

**Internet Banking:** This can also be known as on-line banking, virtual banking and e-banking. It is an electronic payment system that enables customer of a bank to conduct a range of financial transactions through the financial institutions website.

**ATM (Automated Teller Machine):** An ATM combines a computer terminal, record keeping system and cash vault in one unit, permitting customer to enter a financial firms book keeping system with either a plastic card containing a Personal

Identification Number (PIN) or by punching a special code number into a computer terminal linked to a financial firms computerized records 24hours a day.

**POS (Point Of Sale):** This is the time and place where a retail transaction is completed.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 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.

#### **2.1 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;

**2.1.1 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.

**2.1.2 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.

**2.1.3 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.

**2.1.4 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.

### **2.1.5 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.

### **Importance of Internet Banking on the Deposit Money Banks**

Internet banking will enhance the quality of deposit money banks in the following ways;

- i. Increased sales
- ii. Quick transactions-this reduces queues at points-of-sale.
- iii. Cash collection made simple-time spent on collecting, counting and
- iv. 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.

## **2.2 Theoretical Framework**

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

### **2.2.1 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.

### **2.2.2 Bank-Led Theory**

The bank-led theory of branchless banking was postulated by (Lyman, et. al, 2006) 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 its dealings with the banks customers to the bank he is representing through electronic means(such as phones, internet, etc.).

#### **2.2.2.1 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.

#### **2.2.2.2 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.

#### **2.2.2.3 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.

#### **2.2.2.4 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, the more it generates 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).

### **2.2.3 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.

### **2.2.4 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.

### **2.2.5 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.

### **2.2.6 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. Attitudes are those beliefs a person accumulates throughout his life time.

### **2.3 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.

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 deposit money banks in Kenya.

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.

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 et. al, (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, et. al, (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

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 of internet banking. Ogini, et. al, (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 they 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.

#### **2.4 Gap in Literature**

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**

### **3.0 Research 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 and model specifications.

#### **3.2 Research Design**

The research design that was used in this study is the ex post-facto research design which is aimed at establishing the impact of one variable and another. A survey research is one in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered to be representatives of the entire group. Thus, in this study the researcher collected data from the personnel of Zenith Bank Plc

#### **3.3 Population of the Study**

The population of this study comprises of the staff of Zenith Bank Plc, which was estimated to be about 45 personnel. Emphasis was placed on staff knowledge and information concerning the subject of the study.

#### **3.4 Sample Size and Sampling Techniques**

The sampling technique used in the study was simple random sampling technique. This method was chosen because it gives the subjects in the population equal chance of being selected. A sample size of (30) thirty was used. This number was randomly selected from the total population of 45 respondents.



### **3.5 Methods of Data Collection**

Data were collected from primary sources, including questionnaire and interviews with bank officials and a survey of bank customers.

### **3.6 Methods of Data Analysis**

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

These have been used in most studies and also 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 differs 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.

#### **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:

$$\text{ROE} = \text{Profit after tax} \div \text{Shareholders fund or Profit after tax} \div \text{Total equity}$$

#### **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:

$$ROA=B_0 + B_1 \ln IBSE + U -----(4)$$

$$\ln ROE=B_0 + B_1 \ln IBSE + U -----(5)$$

$$\ln NIM=B_0 + B_1 \ln IBSE + U -----(6)$$

.Where:

ROA=Return on assets

ROE=Return on equity

NIM=Net income margin

IBSE=Internet Banking Service Expenditure

B<sub>0</sub>=the intercept

B<sub>1</sub>=the slope

U =Error term

### **3.7 Limitation to the Methodology**

**Generalizability:** The study is limited to Zenith Bank Plc, and the findings may not be generalizable to other banks in Nigeria or other countries.

**Data Availability:** The accuracy and availability of data may affect the depth of the analysis. Some financial data or specific internet banking usage statistics may be confidential or incomplete.

**Technological Changes:** Rapid technological advancements and changes in the regulatory environment during the study period may impact the findings. The study's results may need to be interpreted in the context of these changes.

**Customer Behavior:** Changes in customer behavior and preferences over time may influence the adoption and impact of internet banking.

Measurement Errors: The study uses financial ratios and metrics to measure profitability, which may be subject to measurement errors. The use of these metrics may also oversimplify the complex relationships between internet banking and profitability.

## CHAPTER FOUR

### 4.0. Presentation of Data Analysis

Out of the 200 administered questionnaires, 68 was not returned, 132 was retrieved, out of which 7 questionnaires were invalid because they were not properly completed. Thus, 125 valid questionnaires (62.5%) were processed for the analysis.

**Table 4.1: Respondent's Characteristics**

S/N	Characteristics	Freq.	Percentage
<b>1</b>	<b>Gender</b>		
	Male	86	68.8%
	Female	39	31.2%
<b>2</b>	<b>Academic Qualification</b>		
	B.A. /B.SC. degree	56	44.8%
	Masters Degree	66	52.8%
	Ph.D. Degree	3	2.4%
<b>3</b>	<b>Work Experience</b>		
	Less than 3yrs	11	8.8%
	3-6 years.	50	40.0%
	7-10 years	20	16.0%
	Above 10 years	44	35.2%
<b>4</b>	<b>Work Designation</b>		
	Head of Operations	16	12.8%
	Asst. Head of Operations	7	5.6%
	Operations Officer	14	11.2%
	Customers service	28	22.4%
	Others	60	48.0%
	<b>Total</b>	<b>125</b>	<b>100%</b>

Source: Field Work: 2025

The table above shows that male respondents 86 (68.8%) are greater than females 39(31.2%). more than half of the respondents hold a master's degree (n = 66, 52.8%), while 56 (44.8%) of respondents possess a B.A. /B.Sc. degree. A few hold a Ph.D. degree (n = 3, 2.4%), this suggests that respondents have requisite academic qualifications. 61 (11 + 50) respondents representing 48.8% (8.8% + 40.0%) have

work experiences within 6years, 20 (16.0%) have 7-10years work experience, and 44 (35.2%) have above 10 years work experience. This suggests that respondents should have experiential knowledge on the subject, which should help in eliciting valid response.

The participants in the survey have diverse work experience in various capacities, ranging from Head of Operations (12.8%), Assistant Head of Operations (5.6%), Operations Officer (11.2%), Customer Service Officer (22.4%), and other miscellaneous job titles (48%). This implies that the responses obtained for the study is well diversified.

#### **4.1: Banks Profitability from Automated Teller Machine (ATM)**

Result from analysis of Banks Profitability from Automated Teller Machine (ATM) is presented in Table 4.2.

**Table 4.2: Analysis of Banks Profitability from Automated Teller Machine (ATM)**

	Minimum	Maximum	Mean	Std. Deviation
Request for the issuance of Automated Teller Machine (ATM) cards has improved	2	5	4.19	.780
Profit from the issuance of Automated Teller Machine (ATM) cards has improved	2	5	3.89	.882
Profit from charges on the use of Automated Teller Machine has improved	1	5	3.88	1.036
Income/ revenue from charges on the use of Automated Teller Machine has increased	1	5	3.86	1.019
Income/ revenue from the issuance of Automated Teller Machine (ATM) cards to customers has improved	1	5	3.86	1.159
Overall Mean			3.94	

**Source:** Author's Computation 2025

From the result in Table 4.2, items gauging Banks Profitability from Automated Teller Machine (ATM) generally assumed high Mean score ranging from 4.19 to 3.86. All items have Mean score above 3.80. The overall Mean is 3.94 (equivalent to 78.8% on the 5-point measurement scale). This result suggests that to a large

extent, Automated Teller Machine (ATM) transactions have contributed to banks profitability.

#### 4.1.2. Banks Profitability from Point-Of-Sale (POS) Terminals

Result from analysis of Banks Profitability from Point-Of-Sale (POS) Terminals is presented in Table 4.3.

**Table 4.3: Analysis of Banks Profitability from Point-Of-Sale (POS) Terminals**

	Min.	Max.	Mean	Std. Deviation
The usage of POS Machines has increased	3	5	4.32	.617
Income/ revenue from charges on the use of POS terminals/ platforms has increased	2	5	4.08	.778
Request for the issuance of POS Machines has increased	2	5	4.00	.710
Profit from charges on the use of POS terminals has increased	1	5	3.93	.810
Income/ revenue from the issuance of POS terminals to customers has increased	2	5	3.91	.918
Profit from the issuance of POS Machines has increased	2	5	3.81	.816
Overall Mean			4.00	

**Source:** Author's Computation 2025

From the result in Table 4.3, items gauging Banks Profitability from Point-Of-Sale (POS) Terminals generally assumed high Mean score ranging from 4.32 to 3.81. All items have Mean score above 3.80. The overall Mean is 4.00 (equivalent to 80.0% on the 5-point measurement scale). This result suggests that to a very large extent, Point-Of-Sale (POS) Terminals have contributed to banks profitability.

#### 4.1.3. Profitability from Internet Banking Channel

Result from analysis of Profitability from Internet Banking Channel is presented in Table 4.4

**Table 4.4: Analysis of Banks Profitability from Internet Banking Channel**

	Minimum	Maximum	Mean	Std. Deviation
The usage of Internet Banking Channel has increased	3	5	4.29	.556
The transaction volume from Internet Banking Channel increased	1	5	4.28	.888
Income/ revenue from charges on the use of Internet Banking Channel has increased	2	5	4.07	.790
Profit from charges on the use of Internet Banking Channel has increased	1	5	4.03	1.055
Overall Mean			4.17	

**Source:** Author's Computation 2025

From the result in Table 4.4, items gauging Profitability from Internet Banking Channel generally assumed high Mean score ranging from 4.29 to 4.03. All items have Mean score above 4.00. The overall Mean is 4.17 (equivalent to 83.4% on the 5-point measurement scale). This result suggests that to a very large extent, Internet Banking Channel has contributed to banks profitability.

#### **4.1.4. Banks' Profitability from Mobile Banking Channel**

Result from analysis of Profitability from Mobile Banking Channel is presented in Table 4.5.

**Table 4.5: Analysis of Banks Profitability from Mobile Banking Channel**

	Minimum	Maximum	Mean	Std Deviation
The transaction volume from mobile banking has increased	2	5	4.33	.690
The usage of Mobile Banking channel has increased	1	5	4.33	.690
Profit from charges on the use of mobile banking has increased	2	5	4.25	.795
Income/ revenue from charges on the use of Mobile Banking platforms has increased	1	5	4.22	.712
Overall Mean			4.28	

From the result in Table 4.5, items gauging Profitability from Mobile Banking Channel generally assumed high Mean score ranging from 4.33 to 4.22. All items have Mean score above 4.20. The overall Mean is 4.28 (equivalent to 85.6% on the 5-point measurement scale). This result suggests that to a very large extent, Mobile Banking Channel has contributed to banks profitability.

#### **4.1.5. Banks Profitability from USSD (Unstructured Supplementary Service Data)**

Result from analysis of Profitability from USSD (Unstructured Supplementary Service Data) is presented in Table 4.6.

**Table 4.6: Analysis of Banks Profitability from USSD**

	Minimum	Maximum	Mean	Std. Deviation
The usage of USSD channel has increased	3	5	4.34	.599
The transaction volume from USSD channel has increased	3	5	4.34	.613
Profit from charges on the use of USSD has increased	2	5	4.21	.692
Income/ revenue from charges on the use of USSD channel has increased	1	5	4.20	.678
<b>Overall Mean</b>			<b>4.27</b>	

**Source:** Author's Computation 2025

From the result in Table 4.6, items gauging Profitability from USSD (Unstructured Supplementary Service Data) generally assumed high Mean score ranging from 4.34 to 4.20. All items have Mean score above 4.20. The overall Mean is 4.27 (equivalent to 85.4% on the 5-point measurement scale). This result suggests that to a very large extent USSD (Unstructured Supplementary Service Data) transactions have contributed to banks profitability.

#### 4.2. Impact Of Digital Channels on Bank's Performance

Result from analysis of Impact of digital channels on Bank's Performance is presented in Table

4.7. The items are ranked in descending order of Mean score.

**Table 4.7: Impact of digital channels on Bank's Performance**

	Minimum	Maximum	Mean	Std. Deviation
Banks' profitability has increased due to digital channel usage	1	5	4.26	.690
ATM contributes most to banks profitability	2	5	3.87	.769
Internet banking contributes most to banks profitability	2	5	3.84	.759
Mobile Banking contributes most to banks profitability	1	5	3.83	.860
USSD contributes most to banks profitability	2	5	3.78	.875
POS contributes most to banks profitability	2	5	3.64	.806
<b>Overall Mean</b>			<b>3.87</b>	

**Source:** Author's Computation 2025

From the result in Table 4.7, respondents generally agreed that Banks' profitability has increased due to digital channel usage ( $M = 4.26$ ). However, the three highest ranking platforms with Mean score above 3.80 are ATM ( $M = 3.87$ ), internet



banking ( $M = 3.84$ ), and Mobile banking ( $M = 3.83$ ). Furthermore, the standard deviation scores for these items are low (.759 to .860), thus suggesting a strong consensus among respondents that the platforms have contributed appreciably to banks profitability. Other platforms such as Unstructured Supplementary Service Data (USSD) ( $M = 3.78$ ) and POS ( $M = 3.64$ ) have also contributed notably to banks profitability. Considering that they have Mean score above 3.60 (equivalent to 72%). With an overall Mean of 3.87, it is concluded that e-channels contribute appreciably to banks profitability. However, the channel contributing the most is ATM.

#### 4.3. Assessment of the most widely used tools of digital banking in Nigeria.

Result from analysis of the application rate of digital banking tools in Nigerian Banks is presented in Table 4.8. The items are ranked in descending order of Mean score.

**Table 4.8: Application of Digital Banking Tools in Nigerian Banks**

	Minimum	Maximum	Mean	Std. Deviation
Use of mobile banking platforms for local funds transfer	1	5	4.36	.928
Use of internet/ online banking for local funds transfer	2	5	4.29	.793
Use of Automated Teller Machine for cash withdrawal by customers	3	5	4.22	.809
Use of USSD (unstructured supplementary service data) to aid the execution of bank transactions	2	5	4.00	.984
Use of Point of Sales (POS) terminals for payments	2	5	3.92	.867
Use of internet/ online banking for international funds transfer	1	5	3.32	1.278
Use of IT for cheque processing/ clearing	1	5	3.24	1.200
Use of Automated Teller Machine for cash deposits by customers	1	5	2.33	.957
Valid N (leastwise)				

**Source:** Author's Computation 2025

Result in Table 4.8 reveals that the mostly applied digital banking tools in Nigerian banks, with Mean scores above 4.0, are the use of mobile banking platforms for local funds transfer ( $M = 4.36$ ), use of internet/ online banking for local funds transfer ( $M = 4.29$ ), and use of Automated Teller Machine (ATM) for cash withdrawal by customers ( $M = 4.22$ ). In essence, mobile banking platforms and Automated Teller

Machine (ATM) are the most widely used tools of digital banking in Nigeria. This notwithstanding, other digital channels such as use of USSD (unstructured supplementary service data) to aid the execution of bank transactions (M = 4.00) and Use of Point of Sales (POS) terminals for payments (M = 3.92) also recorded notable level of usage as their Mean score is above 3.90. The Use of internet/ online banking for international funds transfer (M = 3.32) and Use of IT for cheque processing/ clearing (M= 3.24) generally witnessed moderate usage rate as they have Mean score below 3.50 but above 3.00. The use of Automated Teller Machine for cash deposits by customers (M = 2.33) has the lowest ranking, as such is less popular among Nigerian banks.

#### **4.4. Digital banking has no significant impact on the profitability of banks in Nigeria.**

One-Sample t-test Result on the impact of digital banking on the profitability of banks in Nigeria is presented in Table 4.9.

**Table 4. 9: One-Sample Test Result on the impact of digital banking on the profitability of banks in Nigeria**

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Banks' profitability has increased due to digital channel usage	20.039	120	.000	1.256	1.13	1.38
USSD contributes most to banks profitability	9.745	118	.000	.782	.62	.94
Mobile Banking contributes most to banks profitability	10.680	120	.000	.835	.68	.99
POS contributes most to banks profitability	8.682	120	.000	.636	.49	.78
ATM contributes most to banks profitability	12.272	118	.000	.866	.73	1.01
Internet banking contributes most to banks profitability	12.079	118	.000	.840	.70	.98

**Source:** Author's Computation 2025

From the result in Table 4.9, the impact of the various digital banking platforms on the profitability of banks in Nigeria is above the test Mean of 3.0 as indicated under the column for Mean difference. Further, the difference is statistically significant at 5% for all items enumerated in Table 4.7 as indicated by the p value ( $p < .05$ ). This provides further corroborative inferential evidence that the various digital banking platforms have significant impact on banks profitability.

## **CHAPTER FIVE**

### **5.0 Summary, Conclusion and Recommendations**

#### **5.1 Summary of Findings**

In this study, we set out to empirically evaluate the effect of internet banking on the profitability of Deposit Money Bank of Zenith Bank Plc. in Nigeria. The study was conducted to ascertain how internet banking affects Zenith Bank Plc in Nigeria.

All the internet banking channels studied in this study contribute significantly to the profitability of the banks in Nigeria. The use of internet/ online banking for international funds transfer and use of IT for cheque processing/ clearing generally witnessed moderate revenue generation. The use of Automated Teller Machine for cash deposits by customers has the lowest ranking, as such is less popular among Nigerian banks. Hence, digital banking has a significant positive on banks' profitability in Nigeria.

Mobile banking platforms and Automated Teller Machine (ATM) are the most widely used tools of digital banking in Nigeria. This notwithstanding, other e-banking channels such as use of USSD (Unstructured Supplementary Service Data) to aid the execution of bank transactions and use of Point of Sales (POS) terminals for payments also recorded notable level of usage.

The use of internet/ online banking for international funds transfer and use of I.T for cheque processing/ clearing generally witnessed moderate usage rate. The use of Automated Teller Machine for cash deposits by customers has the lowest ranking, as such is less popular among Nigerian banks. In summary, the mostly applied digital banking tools in Nigerian banks are mobile banking platforms and Automated Teller Machine (ATM).

Automated Teller Machine (ATM) transactions, Point-Of-Sale (POS) Terminals, Internet Banking, Mobile Banking, and USSD (Unstructured Supplementary Service

Data) transactions have all contributed to banks profitability. However, the digital channel contributing the most to banks' profitability in Nigeria is the ATM.

The major findings of the study are summarized below:

- i. 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.
- ii. 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.
- iii. 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 Conclusion**

The innovation and adoption of internet banking which is customer centric has added value to financial institutions globally. The acceptance and use of digital channels has improved banks' products/services, customer's experience and loyalty. The study showed that the various digital channels have significantly impacted bank profitability in Nigeria.

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).

### **5.3 Recommendations**

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

- i. Banks' management should focus more on investing, maintenance, expansion and sustainability of efficient and effective I.T infrastructures. This will help in expanding their business model, and operational reach in a competitive market.
- ii. Competent I.T staff should be employed and trained to improve services and to also help in retaining and attracting customers.
- iii. 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.
- iv. Marketing and education of internet banking service and products should be intensified to attract more customers which enhances profitability.
- v. The bank should conduct more research to find new internet banking product to attract and to retain her potential customers.
- vi. Zenith 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.

- vii. 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.

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