AUTHOR:

TITLE:

YEAR:

OpenAIR citation:

This work was submitted to- and approved by Robert Gordon University in partial fulfilment of the following degree:
_____

TECHNOLOGY INNOVATION MANAGEMENT IN THE NIGERIAN BANKING INDUSTRY: INTEGRATING STAKEHOLDERS' PERSPECTIVES, AN EXPLORATION OF STRATEGY AND POLICY IMPLICATIONS

IBUKUN ESTHER SOKARI

B.Sc. (Ibadan, Nigeria), MPA (Aberdeen, UK)

A thesis submitted in partial fulfilment of the requirements of Robert Gordon University, Aberdeen, UK for the degree of Doctor of Philosophy

Aberdeen Business School
Department of Management
Robert Gordon University, Aberdeen, UK
June, 2017

DECLARATION

I hereby declare that this thesis:

"Technology Innovation Management in the Nigerian Banking Industry: Integrating Stakeholders' Perspectives, an Exploration of Strategy and Policy Implications"

To the best of my knowledge is entirely my own work and that where any material could be constructed as the work of others, it is fully cited and referenced with appropriate acknowledgements given.

<div align="right">

IBUKUN ESTHER SOKARI
JUNE, 2017

</div>

DEDICATION

To the glory of God alone, I dedicate this work to my husband, my mum, my entire siblings and my precious in-laws. Your extraordinary contributions to the success of this research mean more than words can accurately describe. I am eternally grateful to you all.

And of course to my lovely 28month old son (Samuel Odemadighi Oluwakiyesimi); a bundle of joy and an epitome of God's amazing goodness. Like your dad will say: "Sam, you can be proud your mum has got a PhD"

"Success doesn't necessarily come from breakthrough innovation but from flawless execution. A great strategy alone won't win a game or a battle; the win comes from basic blocking and tackling"

………Naveen Jain

ABSTRACT

Technology innovation is one of the defining attributes of the 21st century. The banking sector amongst other key sectors has embraced the use of new technologies to offer electronic banking (e-banking) services. E-banking has been introduced in various economies of the world as a way of delivering effective and efficient banking services. Despite the several benefits of e-banking technologies, many individual bank customers in Nigeria have not adopted most of the available channels. ATM has remained the most patronized compared to other channels such as the point of sales (POS), online banking and the mobile banking. Promotional offers and various publicity for these platforms by commercial banks as well as the introduction of the cash policy which made the use of these platforms mandatory have not yielded substantial outcome.

Therefore, the researcher set out to carry out two interrelated studies in a bid to explore the levels of e-banking adoption by individual bank customers in Nigeria. Firstly, a comparative analysis of the starting conditions of e-banking in Nigeria and the UK was carried out using secondary sources of data. The second part of the study examined the significance of an extended model of Diffusion of Innovation Theory (DIT) on e-banking adoption in Nigeria. This extended model entails the addition of "cost variables" to the mix of Rogers's five attributes of innovation diffusion (i.e. Relative Advantage, Complexity, Compatibility, Trialability and Observability). Cost variables according to this study are the three types of switching costs, the available complementary assets and the usefulness of available services. Based on this DIT extended model, adoption levels of five e-banking platforms: ATM; POS; Online banking; Mobile banking and telephone banking services were investigated. Data for this study were obtained from both the service providers (the commercial banks) and the service users (individual customers). NVivo 10 was used to analyse the qualitative data while ordinal regression modelling was utilised to analyse the quantitative data obtained.

According to the findings of this research, the security of the platforms, need for a strategic enlightenment campaign as well as infrastructural development (i.e. internet and electricity) are the three key factors that are fundamental to increase adoption of e-banking platforms in Nigeria. Findings also reveal the peculiarity of each of the e-banking platforms as different variables significantly predict uptake of individual platforms while Compatibility, Observability, Gender and Education emerged as significant predictors of ATM. Compatibility, Trialability Procedural Switching Cost and Gender predict POS patronage. For online banking, Compatibility, Procedural Switching Cost, Gender and Education emerged as significant predictors of this platform while Financial Switching Cost, Relational Switching Cost, Age and Education significantly predict the use of mobile banking. Telephone banking is not currently available to individual bank customers in Nigeria and as such further discussions on the quantitative output were discontinued.

Following the expert witness feedback of these key findings, the researcher concludes that it is imperative to critically assess the availability of the enabling mechanisms/structure before introducing an innovation such as e-banking. The importance of this assessment is to evaluate and carefully direct the approach to that which fits such innovation. Underestimating or ignoring the impact of these fundamental structures usually have a negative impact on adoption as evident in the findings of this research which pointed that the current level of infrastructure of the country does not support the uptake of this innovation. This study also concludes that, the security of the platforms, the development of e-banking enlightenment campaign and infrastructural inadequacies should be addressed. Furthermore, attempts to unify or adopt a singular approach to increase e-banking patronage will not yield a significant result because each platform is unique. Thus, subsequent governmental policies and the CBN dictates on e-banking adoption should be formulated or modified based on the consideration of the enabling mechanism. Banks should adopt specific strategies towards increasing the patronage each platform.

Keywords: E-banking; Innovation Attributes; Innovation Adoption; Cost Variables; Switching Costs; Complementary Assets; Perceived Risks.

TABLE OF CONTENTS

CHAPTER SIX - QUALITATIVE DATA ANALYSIS

LIST OF TABLES

CHAPTER SEVEN

LIST OF FIGURES

CHARTS

CHAPTER ONE
OVERVIEW OF THE RESEARCH

1.0   INTRODUCTION

At the dawn of civilisation, specialisation encouraged division of labour which in turn resulted in the production of goods that exceeded an individual's or a household's consumption. The inability of an individual or a family unit to provide for all their needs led to trading excess produce for other household needs (Karimzadi, 2013). This brought into being the concept of trade by barter, whereby goods and services are exchanged for other desirable goods or services (Williams, 1996; Siyanbola, 2013). The lack of "double coincidence of wants|" and the lack of a measure of value were amongst the major drawbacks of trade by barter system (Whelan, 2016) that led to the advent of commodity money and then, the subsequent innovation of paper money (Capie, Tsomosco and Wood, 2003; Achor and Robert, 2013).

The value and the high level of importance that individuals and society at large accord to money have created a positive deposition to ensuring that such is kept safe and secured (Hildreth, 2001). To a great extent, banks have succeeded in gaining people's confidence which allows both individuals and corporate organisations to keep such financial possession in their care. For instance, a report by Demirguc-Kunt et al. (2015), indicated a cut in the number of the unbanked worldwide by 500 million adults due to factors such as new technologies, government reforms and innovative business models. However, the wheels of innovation have not been static; technological advancement has now impacted on the use of paper money thereby facilitating a move towards the use of e-payment structures enabled directly or indirectly by various e-banking platforms (Siyanbola, 2013). While developed economies such as the USA and the UK that spearheaded the introduction of the e-banking system have recorded relative success in

the adoption of e-banking services, a significant number of developing countries are lagging behind despite the inherent benefits (Oluwagbemi et al 2011). Furthermore, the effect of globalisation in the present-day economy has contributed significantly to the need for a payment system that goes beyond physical cash but to such, that is electronically enabled (Salehi and Alipour, 2010; Siyanbola, 2013). Greater emphasis is now placed on the adoption of e-banking channels as governmental policies are directed towards the implementation of a cashless society. The banking industry is at the core of facilitating economic development and banks are making conscious efforts to providing effective and efficient e-banking services to their various customers. Banks are not only saddled with the vital role of making these services available but also to encourage continuous patronage by customers (Wuyah, and Akpan, 2015). In the developing economies where the old (manual) banking system is predominant, a push towards e-banking is crucial to the improvement of economic status (Auta, 2010; Salehi and Alipour, 2010), considering the importance of technological innovations in advancing human societies (Trott, 2012). This research, thus, centres on e-banking adoption in Nigeria: a developing economy with a drive to a cashless society.

1.1   OVERVIEW OF THE COUNTRY OF STUDY

Demographic Attributes: Nigeria is a multi-ethnic society with about three hundred ethnic groups (Erhagbe, 2012). The uniqueness of this country amongst other African countries is projected not only in terms of it multiculturalism but in her "unity in diversity" which characterises such a multi-ethnic society as a nation (Osimen, Balogun and Adenegan, 2013). It is regarded as the most populous African country located in West Africa with its coast on the Gulf of Guinea. To the west, the country shares land borders with the Republic of Benin, Cameroon and Chad to the east and to the North, Nigeria also shares a border with the Niger Republic (Anukam, 2007). As showed in

Figure 1.0 below, there are thirty-six states in the country which are divided into six geo-political zones in addition to the federal capital territory Abuja.

Figure 1.0: *Map of Nigeria*
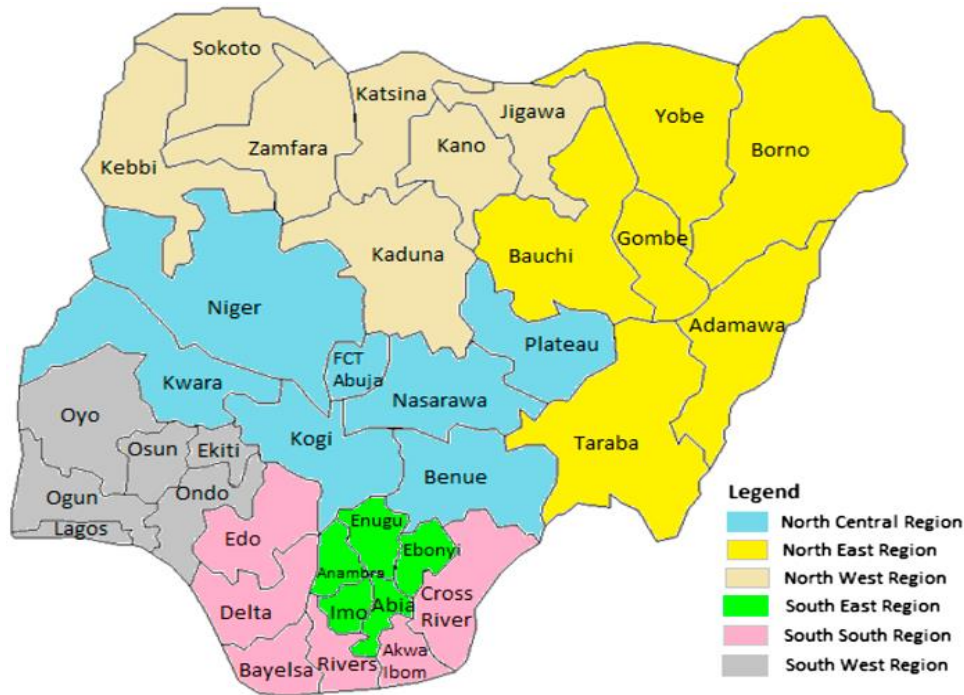
Source: Gayawan and Turra, 2015

The country currently operates a democratic system of government under the leadership of Muhammed Buhari. The United Nations (UN) population estimate for Nigeria at 3rd of August 2016 is 187,366,006. (50.6% males and 49.4% females). This population figure is equivalent to 2.48% of the total world population and yet forecasts indicate continuous increase (Worldometers, 2016). The UN report shows that 48.1 % of the Nigerian population are resident in urban areas. Available statistics also indicate a total dependency age ratio of 46.9% while the active/working population age ratio is estimated to be 53.1% (Trading Economics, 2016). This suggests that a larger percentage of the country's population falls within the working age group. Nigeria age structure can yield a significant growth if rightly positioned to achieve a "demographic

3

dividend" (World Economic Forum, 2014). The Vanguard Newspaper (2015) also report that over 54million (about 34%) Nigerians are not formally educated and therefore, called for a concerted effort from all stakeholders to address this issue.

Economic Status: Agriculture was the major source of government revenues prior to the oil boom era of the mid-1970s (Adedipe, 2004). The heavy dependency on oil revenues did not only leave the agricultural sector in the hands of peasant farmers (Agbaeze, Udeh and Onwuka, 2015) but resulted in massive importation of items that could have been locally produced (Vaughan, et al., 2014). Although, recent government administrations have minimised the level of importation to encourage local manufacturers, the effect has not been substantial (Arigor, Nyambi and Obuo, 2015).

The high rate of unemployment has been a serious problem in the country. This problem has been attributed to the mismanagement of public funds, corruption, neglect of the agricultural sector, unsuitable governmental reforms, infrastructural decay, etc. (Asaju, Arome and Anyio, 2014). The natural, material and human resources that the country is endowed with have not been properly utilised to yield substantial economic benefit (Budina and Pang, 2007).

The available official unemployment statistics of the working age population doubled the 12% recorded in 2006 by the year 2011 putting it at 24% (World Bank report, 2013). Many Nigerians work in the informal sector, engage in low paying jobs to barely survive. In 2012, the National Bureau of Statistics found 60.9% of the population living in poverty, surviving on less than 1.5US dollar per day (Nwude, 2013). Nwude also noted that the current minimum wage which is at N18, 000.00 a month is far below what can be regarded as a living wage as this is obviously inadequate to cater for the basic necessities of life. This wage, according to Odejimi and Odejimi, (2015) is less than $100 a month. The majority of the working population are actually under-

employed: performing tasks that are well below their educational qualifications. A report also indicates that a significant proportion (44.6%) of the working age population are unemployed (World Bank report, 2013). Figure 1.1 below shows the unemployment ratio in Nigeria between 2006 and 2011.

Figure 1.1: Unemployment in Nigeria (2006 – 2011)

(% of working age population)
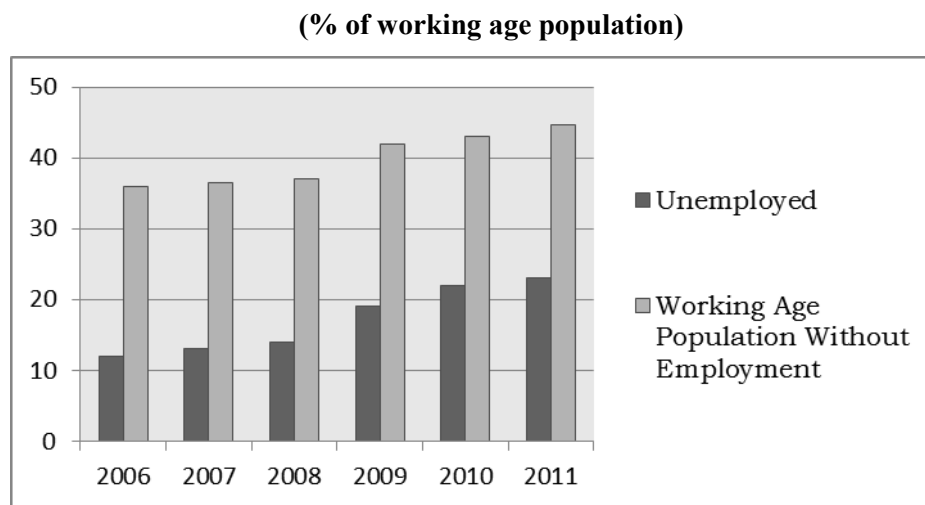
Source: National Bureau of Statistics, Bank Calculations

It is important to note that trade liberalisation in the country has had a negative effect on the labour market (Odejimi and Odejimi, 2015). Improvement in power and energy (critical infrastructures), food security, wealth creation through diversified agriculture and solid mineral sectors, provision of an efficient transport system, provision of education at very minimum standard for all are amongst the seven-point agenda promised by the 2007 government administration; a vision to be achieved by the year 2020 (Oke, Oluwasuji and Simon-Oke, 2011). An appraisal of these goals suggesst no positive indication to its fulfilment (Dode, 2010; Oke, Oluwasuji and Simon-Oke, 2011).

Despite the challenges the country is facing, the banking industry has been restructured to withstand the demands of the modern-day economy. Technological advancement,

globalization, liberalization (Mann and Sahni, 2012; Adu, 2016), regulation and re-regulation of the banking sector (Padoa-Schioppa, 2001) have accelerated growth in the industry. Governmental regulations over the years have generated a wheel of progress in this sector to propel economic growth (Ibrahim et al., 2012; Uduak and Ubong et al., 2015). Although, many of the Nigerian business women especially those who are not formally educated are still very comfortable with the traditional saving contributions amongst themselves to officially opening a bank account due to the simplicity, non-formal agreement such association is based upon (Vanguard Newspaper, 2010; Oluwole, 2014), Nigerian banks are now positioned to operate based on international standard (CBN, 2013). E-banking take-up by commercial banks in Nigeria stems from the need to improve the banking industry that has hitherto malfunctioned (Ajumogobia and Okeke, 2015). Apart from the obvious benefits of minimising operational costs and increasing the level of efficiency and effectiveness of the industry, wider adoption has also been noted to minimise cash robbery, reduce corrupt practices and also increase financial transparency (Yunana and James, 2015).

1.2   THE RESEARCH FOCUS

This study entails the exploration of e-banking acceptance in Nigeria. The researcher intends to draw relevant lessons for Nigeria from a developed economy (the United Kingdom) which has an established[1] e-banking system. The UK banking industry has been specifically chosen because the country serves as starting point for some innovations in the banking industry and the high penetration rates of these innovations have shaped the relationships that now exist between banks and customers (Consoli, 2005a).

---

[1] See appendix 1

In addition, the researcher will consider the implication of "cost variables" towards the level of adoption of e-banking in Nigeria following the findings of Ayo (2010); Central Bank of Nigeria (CBN), (2011); Okechi and Kepeghom (2013); Yaqub et al., 2013; Siyanbola, 2013; Asiegbu, Nwakanma and Etus (2015) which indicated that the adoption rate of e-banking in Nigeria is low. The CBN (2011) report revealed that the Nigerian economy is very much cash based. The report noted that 85% of the channels of payment in Nigeria are carried out through the Automated Teller Machines (ATM) and over the counter (OTC) withdrawals, 14% through cheques while the point of sales (POS) and web payment are 1% and 0% respectively. Despite the various efforts of the Nigerian government and banks to increase the adoption rate of e-banking, a report published by Thisday newspaper (2013) indicated that customers hardly patronise other forms of e-banking channels. This report was based on the plea of one of the leading banks in Nigeria (GTBank), urging customers to use other sources of e-banking channels. Recent studies by scholars such as Agwu and Carter (2014), Tarhini et al. (2015), Bojuwon (2015) Agu, Simon and Onwuka (2016) also confirmed the low adoption levels of other e-banking channels. Based on this evidence, an exploratory research on the inhibitors of e-banking adoption in Nigeria is necessary especially from the perspectives of both the individual bank customers (service users) and the bank officials (service providers) as similar studies carried out in the country of study have not adopted this approach. For instance, Bojuwon (2015), examined factors associated with patronage and resistance of the internet banking among bank customers in Nigeria. Also, Tarhini et al. (2015), study on the factors that impact on the adoption of internet banking in Nigeria was focused on bank customers. Furthermore, the investigation of inhibitors of mobile banking patronage in Nigeria by Agwu and Carter (2014); Agu, Simon and Onwuka (2016) were also carried out from the perspectives of bank

7

customers. Therefore, this study will contribute to the body of knowledge by exploring the levels of e-banking adoption from the two perspectives aforementioned.

The approach taken in this study will be in two interrelated parts. Firstly, the researcher will carry out a comparative analysis of e-banking starting points in Nigeria and the UK in a bid to examine whether the level of growth of e-banking in both countries is influenced by the banks' starting points. These starting points as far as this study is concerned are defined in terms of banks' objectives, strategies adopted by banks, path dependency[2] as well the available complementary assets[3] (including ICT infrastructure) at the start of e-banking system in both countries.

Secondly, by adding "cost variable" to the existing five innovation adoption variables (relative advantage, compatibility, complexity, trialability and observability) of Rogers' Diffusion of Innovation Theory (DIT), the researcher will also evaluate the cost implication for acceptance for customers and potential customers.

1.3   SCOPE OF THE RESEARCH

The introduction of the first communication technology in the banking sector can be traced back to 1846 in the United States of America when a telegraph messaging system was introduced (Bartiz-Lazo and Wood, 2002). This unified system enhanced communication between banks and helped banks to minimise the inter-market price differentials between regions (Gardner, 2011). This early innovation has been overtaken by a series of advanced and technologically based innovations. This study will consider banking innovations that evolved both in the UK and Nigeria between 1967 and 2013 which is the commencement of the research. The 1967 starting point has been chosen because banking innovations at this period such as the introduction of credits cards and

---

[2] "A dynamic process whose evolution is governed by its own history" (David, 2006 pp1)
[3] Tools needed for successful commercialization of a given innovation apart from the ones originally designed to work with the innovation (Teece, 1986)

ATMs marked the beginning of e-banking in the UK (Bartiz-Lazo and Wood, 2002; Consoli, 2005). These innovations have over the years transcended into what is now known as electronic banking.

1.4 THE STRUCTURE OF THE THESIS

This section highlights the contents of this study. This entails the starting conditions of e-banking in the country of study based on the following four key variables;

- ❖ Banks' Objectives,
- ❖ Strategies Adopted by Banks
- ❖ Path Dependency
- ❖ Available Complementary Assets

The impact of these factors on the e-banking take-up by commercial banks in both countries of focus as well as the investigation of the current level of e-banking adoption as a way of predicting further adoption. These are the two central angles upon which all the ten chapters of this study is based upon. Following the general introduction presented in chapter 1, the specific content of rest of the chapters are as follows:

Chapter Two: The historical background of the transition in the banking industry that gave birth to e-banking is presented. Discussion in this chapter also focuses on the concept of e-banking, its components as well as the general associated benefits of this innovation.

Chapter Three: This chapter presents the aims and objectives of this study, showcasing the synergy between the first part of the study i.e. the comparative analysis of the starting point of e-banking in the UK and Nigeria and the primary research on the exploration on the levels of e-banking adoption in Nigeria. This chapter also justifies the research methodology as well as stating claims about the originality of this research and the expected contribution to knowledge.

Chapter Four: This chapter is in three parts. The first part is based on the review of relevant literature and issues regarding the major occurrences that impacted on the take-up of e-banking by commercial banks in both countries of study will be reviewed. A review of the current effort of the Nigeria government towards an increase in e-banking adoption is also considered. The second part of this chapter entails a comparative analysis of the starting point of e-banking in the UK and in Nigeria. The third part is a review on the theoretical underpinning of this study and the introduction of the cost variables added to the mix of Rogers' innovation attributes.

Chapter 5: In this chapter, the methodological approach of this study is presented. A discussion on the philosophical approach of this research is considered. The chapter also provides the justification for the choice of method, the adopted data collection techniques and the mode of the data analysis.

Chapter 6: This chapter presents perspectives of e-banking service providers in Nigeria i.e. the commercial banks based on the analysis of the in-depth interviews conducted with the eight e-banking officials.

Chapter 7: This chapter provides a descriptive analysis the perceptions of e-banking service users (individual bank customers) towards e-banking adoption. The demographic attributes of the respondents are also presented.

Chapter 8: This chapter presents the multivariate analysis and findings of the relationship between e-banking adoption and the extended model of Rogers' innovation attributes.

Chapter 9: Discussions on various findings of this research based on the aims and objectives are presented in this chapter. Also, this chapter incorporates the feedback of the expert witness on the key findings of this research.

Chapter 10: This final chapter entails the research conclusions and recommendations. A brief discussion on the limitation of study and suggestions for future research is also presented. Figure 1.2 below shows the outline of the thesis structure.

Figure 1.2*: Structure of the thesis*
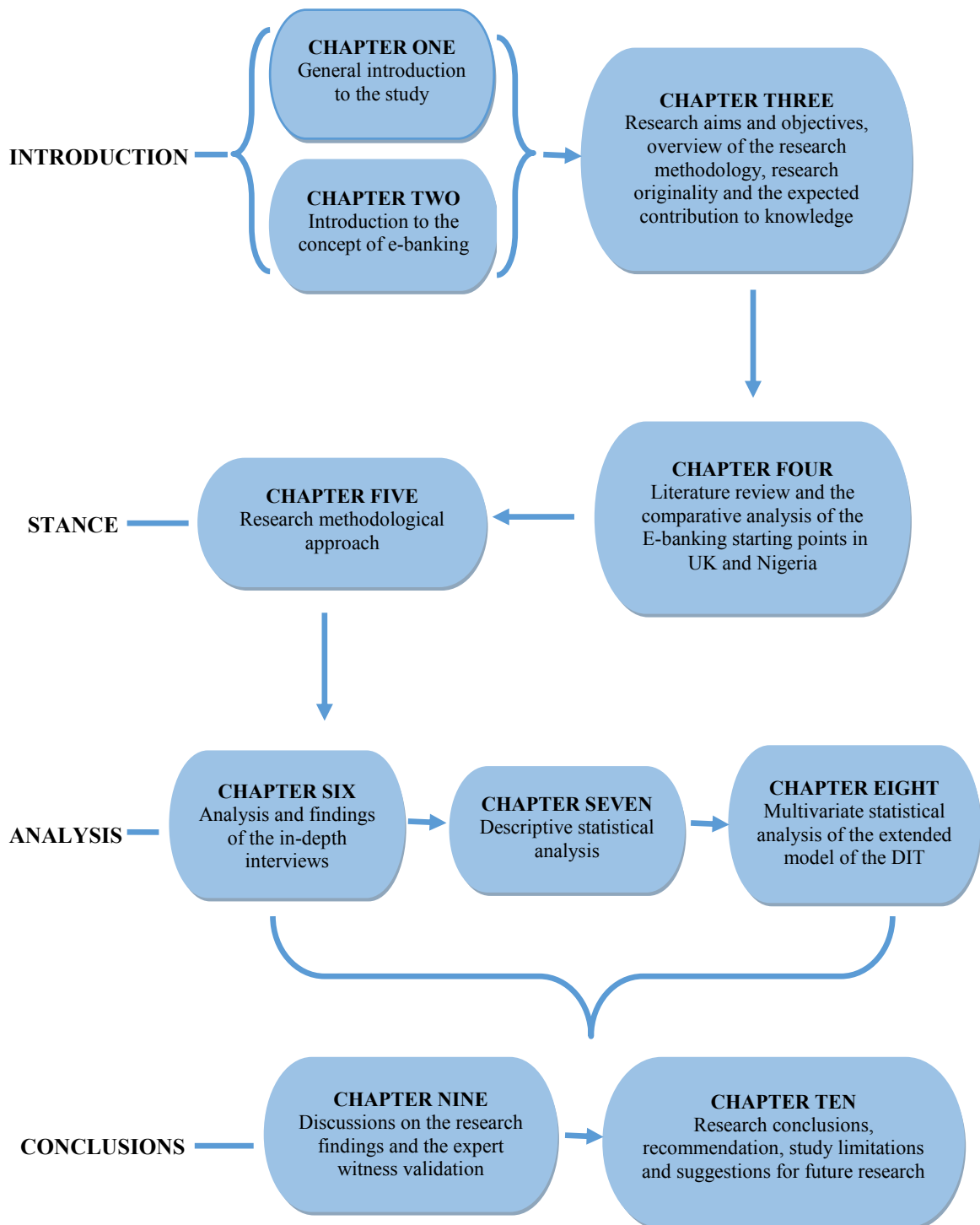
CHAPTER TWO
INTRODUCTION TO THE CONCEPT OF E-BANKING

2.0 INTRODUCTION

In an attempt to explore the central idea of this study which is e-banking, this section introduces: significant transitions in the banking sector that have facilitated e-banking, the concept of e-banking systems, the components of e-banking and the benefits of e-banking systems.

2.1 TRANSITIONS IN THE BANKING SECTOR SINCE 1967

The financial services of the world have expanded in scale and scope (through diversification) thereby encompassing not just the banking system but other financial institutions such as building societies, insurance and investment companies (Joseph et al. 2005). Following the expansion of these various aspects of commercial finance is the emergence of new distribution channels particularly e-commerce. This has changed the mode of competition amongst players in financial services (Wasserman and Makow, 1999; Hughes, 2001). Banks, amongst others, are regarded as one of the prime agents for assuming liabilities and acquiring claims in a financial system (Sanusi, 2012) therefore, possible investments in a particular economy are made possible by the financial resources in the financial system. This, therefore, signifies why the banking system plays a significant role in actualising such financial support (Ibrahim et al. 2012).

Over the years, the banking sector has witnessed various forms of change: a significant occurrence is a gradual transition from paper-based transactions and services to electronic transactions. This has been adopted as a way of coping with the dictates of fast moving economic systems which require flexible strategies afforded by technological advancement. According to Kaur, (2013) over 50% of banks' transactions

are now conducted electronically, and the growth rate is increasing. This development in the banking system has been orchestrated by a significant growth in the world of Information Communication Technology (ICT) which has resulted in the advent of networked computers (Agboola, 2003). The application of these devices in the banking industry transformed the manner and approach to banking services. According to Woherem (2000), the pressure placed upon banks in the face of globalisation, deregulation and rapid change in ICT was to re-evaluate their stance in a bid to survive emerging competitive market trends. The advent of computers and other electronic devices made possible the evolution of e-banking. Generally, electronic banking has enhanced the speed and improved the quality of banking services all over the world (Agboola, 2003).

At this juncture, the fundamental questions that come to mind are: what is e-banking; what are the components of e-banking and of what benefit is e-banking to current day banking services? These questions are addressed in the following sections.

2.2   OVERVIEW OF E-BANKING SYSTEM

In a bid to aid the understanding of e-banking, this section will also consider the major differences between the traditional form of banking systems and e-banking. The emphasis is however not on the traditional banking system but the e-banking.

Chaffey et al. (2006); Malhotra and Singh (2007) and Pedro (2012), described the evolution of e-banking banking systems as a paradigm shift from the old ledger cards and manual filing systems to electronic retail banking services. E-banking is the direct delivery of both the new and the traditional form of banking services to customers and potential customers via an electronic, interactive medium (Pedro, 2012 and Siyanbola, 2013). Burr (1996) conceptualised e-banking as an electronic platform that exists between customers and banks which enables the preparation, control and oversight of

financial transactions. According to Gbadeyan and Gbonda (2011) e-banking allows an enormous amount of banking transactions to be carried out electronically as currency and bank notes are now converted to data that are then translated through telephone lines and satellite transponders usually referred to as an e-banking system.

As far as Dragos et al. (2013) are concerned, ICT remains the primary backbone of e-banking for banks to achieve a 24 hour financial services, minimal error and speedy delivery of financial services. Further to this, the increase in the percentage of internet users has also increased the move towards electronic banking (Agbaje and Ayanbadejo 2013).

According to the 2013 report of the Office of National Statistics, the UK, for instance has experienced about 50% increase of internet users for banking purposes. This has increased the number of banking transactions operated electronically via secured communication network with the aid of specific software provided by the bank. This avenue still enables customers to establish and maintain relationships with their bank without having to visit the branch.

Maholtra and Singh (2007); Oyewole et al. (2013) regarded e-banking as a major shift in marketing practices in terms of its enabling capacity for banks to offer more effective and extensive value-added products and services. E-banking according to Siyanbola (2013), has stimulated globalisation in banking transactions and as a result, banks now utilise infrastructures (e.g. internet) afforded by the global village to enhance banking services. E-banking has not only aided the mode of banking operations, it also has influenced the kind of services banks can now provide to customers (Sayar and Wolfe, 2007; Pedro, 2012) e.g. ATMs, direct deposits, credit/debit cards (Hogarth and Anguelov, 2004). Table 2.0 below shows the major differences between traditional banking systems and e-banking systems.

Table 2.0: *Major differences between the traditional banking system and the e-banking*

Traditional Banking System	The E-banking system
The use of old ledger cards and manual filing systems.	Use of electronic devices and telecommunication networks
Banking transactions are done solely by bank officials within the bank premises	E-banking now affords significant number of banking activities to be carried out by customers in a place of comfort
Customers do not need to have access to sophisticated software or certain electronic devices to conduct banking transactions	Computer, software and telecommunication networks, certain electronic devices are among the major devices for e-banking operations
Processing of banking transactions are solely paper-based	Minimal paper-based banking transactions and processes

Source: *Author generated from the analyses of Gilaninia et al. 2011 and Pedro, 2012*

2.3   COMPONENTS OF E-BANKING

In line with Sakib et al., (2010), financial institutions currently focus more on electronic transactions: a techno-economic trend that advocates the move towards a cashless society. Therefore, banks with the aid of ICT have embarked on automation as a means of gaining an efficient and a more effective financial service. Agboola, (2003) describes such automation as that which involves the use of computer based devices to carry out banking transactions in a manner that increases its speed, accuracy and scope. To achieve these gains, banks started with the use of ICT facilities and devices such as the magnetic ink character reader: a device invented in America in 1956 (APCA Publication, 2008) in order to effectively help with the growing volume of cheques by encoding cheques in a way that can be read electronically, and subsequently other innovations such as automated teller machines, electronic funds transfer, plastic debit/credit cards evolved. These were organised together into an integrated system which then helps to eliminate the drudgery caused by manual mode of banking transactions (Agboola, 2003). Contrary to the view of some scholars such as Safeena, Abdullah and Hema (2010) e-banking is not the same as online or internet banking, it is according to Burr (1996) an electronic platform that exists between customers and

banks which enables the preparation, control and oversight of financial transactions. Thus, online banking otherwise known as internet banking is one of the components of e-banking services.

Awuondo, (2004) outlined the following as common components of e-banking:

1. *Automated Teller Machine (ATM)* – An ATM is a computerised telecommunication device which allows customers to have self-service access to their financial institution in a public place. This device is operated with the use of specially designed chip smart card or magnetic stripe card that contains a specific card number and some other security based information, such as a personal identification number (PIN) (Adepoju and Alhassan, 2010). In many countries, the ATM has been the first technological innovation to be put in general use in the banking industry (Bank of England Quarterly Bulletin (BEQB), 1983). It is one of the earliest components of e-banking (Safeena, Abdullah and Hema, 2009). In the UK, for instance the ATM alongside with magnetic stripe plastic cards were introduced in 1967 and 1969 respectively and these marked the beginning of self-service banking in the UK (Bartiz-Lazo and Wood, 2002). However, amongst the five channels of e-banking that this study considers ATM was the first e-banking channel introduced in Nigeria in 1990.

2. *Telephone Banking* (TB) – TB is another vital component of e-banking which started gaining ground as telecommunication systems advance. TB is another channel used by banks to deliver banking services. It entails customers' interaction with the bank over the phone (Agboola, 2003). The spread of this mode of banking in the UK was between 1980 and 1995: over ten years following the launch of the ATM (Samakovitis, 2012). According to Ahmad and Buttle (2002), the major advantage of this channel of banking, from the

perspective of banks is a lower cost profile compared to having the same services provided in branches and on the other hand, customers enjoy comfort and access to 24hour telephone banking.

3. *Interactive TV* (ITV) – According to Vats (2009), ITV was launched in the Latin American and European regions between 1999 and 2001 although, its success was initially criticised as a banking platform due to the envisaged prospects of the emerging internet/PC banking over ITV, banks have adopted this channel of e-banking to reach out to a wider range of customers. ITV banking services are delivered through the television and allow the users to interact with the content (Groeneweg and Kar, 2007). This form of e-banking makes use of existing television in households to perform banking activities such as bill payment. Usually, it requires a decoder which acts as a computer connected to the cable television networks (Agoola, 2003).

4. *Electronic Fund Transfer/Point of Sales (EFTPOS) banking (with the use of credit and debit Card)* - Electronic Fund Transfer System is "the instantaneous transfer of funds direct from the bank by use of an EFTS card" (Pegg, 2007, pp 47). Electronic Fund Transfer places a third party into the customers' financial institution communication link, by sending electronic payment messages via retailers to the financial institution for processing (Agoola, 2003). This mode of e-payment is gaining ground in recent times, for instance, Pleijster and Ruis conducted a study in the Netherland in 2012 on POS and costs in the merchant sector and found out that payment by debit card is the most effective compared with other forms of payment such as cash.

5. *Online banking*: Online banking system is also often called internet banking (Adepoju, Babalola and Onyeabor, 2011). It is a type of e-banking which

utilises the internet as a medium to undertake banking activities (Sayar and Wolfe (2007); Singhal and Padhmanabhan, (2008); Ahasanul et al. (2009); Ojeka and Ikpefan, (2011) such as payment of bills, checking account balance, transfer of funds, payment of mortgages etc. (Ahasanul et al. 2009; Ojeka and Ikpefan, 2011). Online banking came into the limelight in the 1990s (Petrova, 2002). Prior to this form of e-banking, banks basically used the internet as a platform to display information about their products and services on their various websites, the evolution of more sophisticated technology in this direction resulted in its utilisation for banking transactions purposes (Tan and Teo, 2000).

6. *Mobile/Short Message Services (SMS) Banking* – Shortly after the emergence of online banking, banks in conjunction with telecommunications companies worked towards the emergence of another form of online banking service via mobile telephony. The unique characteristic of the availability of cellular communication in larger part of the world has promoted the idea of mobile/SMS banking, a part of e-commerce usually known as mobile commerce or m-commerce (Sakib et al., 2010). Tiwari and Buse, (2007, p33), conceptualized m-commerce as "any transaction that involves the transfer of ownership or rights of goods and/or services, which is initiated and/or completed by using mobile access to computer-mediated networks" Mobile-banking enables bank customers to use their mobile device to utilise certain banking services directly by accessing the internet with the aid of a micro-browser on a mobile phone and also gaining access to SMS banking via downloadable applications and software clients (Peevers, et al. 2011).

However, the low cost, simplicity and ease of use associated with this form of e-banking seems to have been a major yardstick for its adoption by banks, especially in developing economies. Mobile banking affords customers the privilege of accessing their account balance, making an inquiry about a given transaction, changing their password, topping-up their mobile phones, transferring money and also making payments amongst others. Devices needed for this form of e-banking are mobile phones, personal digital assistant (PDAs), wireless tablets and any other device that can connect to a mobile telecommunication network (Goyal et al., 2012).

Having considered the major components of an e-banking system which provide the platforms for e-banking services, the focus of this research will be on five components out of the six identified above. These are ATM, internet banking, POS, telephone banking and mobile banking. These five components are the main e-banking services that can be utilised for banking transactions in Nigeria (KPMG, 2013).

2.4   BENEFITS OF E-BANKING

E-banking now enables customers to perform their banking operations electronically as opposed to the old ledger cards and manual filing systems used by bank officials to conduct banking transactions manually without the aid of electronic devices such as computer and the internet. The electronic communications used for online banking services include the internet, e-mail, e-books and mobile phones (Chaffey et al., 2006), computers, digital TVs etc. (Sayar and Wolfe, 2007). Some of the main benefits of e-banking are as follows:

   ❖ E-banking enhances cheap and secured communication flow between potential and existing customers as information regarding banking products and services are easily displayed on banks' websites and other electronic communication

channels (Salawu and Salawu, 2007). The internet, for instance is meant to serve as a secured means for banking transaction purposes void of any form of intruders or hackers. Securing the e-banking platforms have been a fundamental challenge and as such, militating against increased adoption (Ayo, 2010; Dhurgham, Hariri, 2012 and Tarhini et al., 2015). However, constant efforts are geared towards the minimisation of this if not complete eradication. Banks can save cost by the virtue of e-banking as the transaction cost for a simple non-cash payment in a bank branch costs about eleven times more than the one done on the internet (Jayawardhena and Foley, 2000).

❖ Reduction in paper work and associated human error has made e-banking preferable when compared to old manual banking systems (Al-Sukkar and Hasan, 2005; Asiegbu, Nwakanma and Etus, 2015).

❖ E-banking has resulted in higher levels of innovation, delivery of improved products and services (Salawu and Salawu, 2007) and reduced cost of processing a transaction compared to the traditional mode of banking (Claessens and Kliengbiel, 2001; Asiegbu, Nwakanma and Etus (2015). For instance, the traditional paper payments system attracted high charges on payment such as incidental charges and payee matching when compared to using an e-payment channel. Also, the administrative cost of processing paper cheques is eliminated with e-banking (Facta Vera, 2011).

❖ ATMs have been mainly designed to perform the same task that a cashier would do with greater speed, accuracy and minimal cost (Jayawardhena and Foley, 2000). In addition, electronic payments are reconciled on the system once any banking transaction (such as direct debit, POS transaction, debit or credit card payment) occurs.

- ❖ E-banking helps banks to accommodate and serve a greater number of customers more efficiently even with the same physical infrastructure (Dragos et al. 2013 and Wuyah, and Akpan, 2015).)

- ❖ E-banking saves time and allows 24hour access to banking services (Kiang et al. 2000; Kaur, 2013). E-banking enables customers to have access to their banking activities and information at any time at their convenience. This is one of the most attractive benefits of e-banking as customers can be freed from the old traditional banking system of converging at the banking hall for a simple banking transaction. E-banking has been designed to afford customers access to their banking transactions at any point in time (Ojeka and Ikpefan, 2011).

- ❖ E-banking leads to competition amongst existing banks as well as from non-financial institutions (Jayawardhena and Foley, 2000). Banks are able to introduce more innovative e-banking services that suit emerging markets, their customers and potential customers.

- ❖ E-banking leads to an increase in the funds available to commercial banks (Yaqub et al., 2013).

E-banking appears to be the most preferred tool to meet the changing demands of customers in this global age, it is growing at a much faster pace than other e-commerce sectors coupled with the fact that financial services are more data intensive without need for physical delivery (Zeko, 2004) Therefore, attention on e-banking keeps gaining ground as technology keeps advancing through an expansion in the range of services banks can provide in order to aid banking activities (Ojeka and Ikpefan, 2011). The use of electronic banking has, over the years, experienced growth in numerous countries of the world such as the UK, the USA, Netherlands, Ghana, Nigeria, India etc. Generally, e-banking has impacted the traditional banking system (Lichtenstein and

Williamston, 2006) as the general transaction cost of banking for customers and banks is reduced in addition to increased benefits for small and medium scale enterprises (Riyadh et al., 2009).

2.5   CHAPTER CONCLUSION

In summary in this chapter, the researcher has been able to examine the idea of e-banking, identify key components of e-banking as well as associated benefits. This chapter has enhanced an understanding of what e-banking represents where this research is concerned. The next chapter highlights the research aims and objectives.

CHAPTER THREE
RESEARCH AIMS AND OBJECTIVES

3.0   RESEARCH AIMS

Considering the role of e-banking systems as a channel for more effective and efficient banking activities in the banking industry (Gbadeyan and Gbonda (2011); Foon and Fah (2011); Oluwagbemi et al 2011; Yaqub, 2013), the overall success and sustenance of this segment of banking is, to a large extent, dependent on customers and potential customers' ability to adopt and retain its usage (White and Nteli (2004). As a way of understanding factors that can better influence the e-banking adoption rate in Nigeria, the researcher will investigate the general inclination for banks' adoption of e-banking services in a developed country (such as the UK) and in a developing country (Nigeria) in order to examine the significance of this starting point on the level of growth of e-banking services. Drawing on secondary sources of data, these starting points will be investigated based on the following factors: objectives of banks; the strategies adopted by banks, path dependency and the available complementary assets. In addition, Diffusion of Innovation Theory (DIT) will be extended to achieve the second part of the study which examines the cost implications for individual bank customers' adoption of e-banking services. Also, the perceived risks about e-banking services will be examined.

3.1   RESEARCH OBJECTIVES

The following objectives have been proposed;

1. To evaluate the general starting conditions of e-banking adoption by banks in the UK and Nigeria.

   Rationale:

   The result of this investigation will facilitate the understanding of the state of commercial banks in both countries of study as at the time of e-banking take-up.

Thus, providing insight into the level of preparedness of commercial banks in Nigeria towards the provision of e-banking products and services. The examination of this factor is important in analysing low levels of e-banking adoption as such, drawing attention to relevant lessons that developing countries can learn concerning e-banking innovation adoption.

2. To examine the availability of the required complementary assets in both countries that support the provision of e-banking products and services

   Rationale:

   This finding will enhance the understanding of the state and the level of availability of the supportive mechanisms for e-banking take-up by commercial banks. The similarities or the disparity in this assessment will also provide insight to explaining the current levels of e-banking adoption in Nigeria.

3. To examine the impact of the perceptions of the e-banking service providers (the commercial banks) and the service users (individual bank customers) on e-banking adoption in Nigeria.

   Rationale:

   This finding will determine the current adoption rate of e-banking services in Nigeria. This will also help to generate the current perceptions of individual bank customers towards the available e-banking platforms. This is considered as a crucial step to devising an appropriate approach to increasing patronage.

4. To evaluate the significance of each of the variables in the extended model of the DIT on the levels of e-banking adoption by individual bank customers in Nigeria.

Rationale:

The understanding of the relationship between the levels of adoption of each of the e-banking platforms and the variables in the extended models of the DIT will serve as a guide to developing a more appropriate model that will facilitate greater patronage of the various e-channels provided by the commercial banks in Nigeria to individual bank customers.

5. To determine the effect of the perceived risks on the adoption of e-banking products and services in Nigeria.

Rationale:

These findings will aid the understanding of the various identified risks militating against the adoption of e-banking as perceived by both the customers and the banks. The consideration of this factor will help commercial banks and policy makers in Nigeria to adopt a more suitable approach in the provision and implementation processes of e-banking products and services.

3.2 RESEARCH QUESTIONS

The following research questions have been generated having reviewed a significant body of relevant literature:

1. Using secondary sources what were the:

   (a) Starting conditions for e-banking adoption in both countries?

   (b) Available complementary assets in both countries?

2. (a) What was the readiness of commercial banks in Nigeria at the time of e-banking adoption?

   (b) What are the levels of adoption of the e-banking platforms in Nigeria by individual bank customers?

3. (a) What is the relationship between the perceptions of individual bank customers in Nigeria about e-banking services and the levels of adoption?

(b) What is the effect of the perceptions of the commercials banks regarding the e-banking services provided on the low levels of adoption by individual bank customers?

4. What are the implications of the extended model of the DIT on the levels of adoption of each of the e-banking platforms and perceived risks on e-banking services in Nigeria?

3.3: OVERVIEW OF RESEARCH METHODOLOGY

This research utilises both the secondary and primary sources of data. The first part of this study on the comparative analysis of the starting point of e-banking in the UK and Nigeria is a secondary research while data for the second part of the study on the extended model of the DIT and the levels of e-banking adoption will be obtained through primary sources. Essentially, a mixed research method approach will be adopted for this study. Furthermore, in a bid to strengthen the conclusions of this research, the key findings of this study were presented to an expert witness for an objective independent view.

3.4 AN OVERVIEW OF THE RESEARCH ORIGINALITY AND THE CONTRIBUTION TO KNOWLEDGE

Attention of scholars has been drawn to e-banking services in various parts of the world (Yu, 2012). For instance, Brown et al, (2003) used Rogers' Diffusion of Innovation Theory and the Decomposed Theory of Planned Behaviour in a survey research in South Africa and found out that, factors such as: relative advantage, perceived risk, trialability, and the available e-banking service influence customers' decision to adopt e-banking. In 2008, Amin et al. used Technology Acceptance Model (TAM) as their

theoretical model for their study and discovered that ease of use, perceived usefulness, available information and normative pressure has a significant impact on e-banking acceptance in Malaysia. Ozdemir and Trott (2008) integrated TAM and DIT in their exploratory study of internet service adopters and non-adopters in Turkey to examine the factors that affect the process of internet banking adoption and to enable the characterization of adopter and non-adopters into different segments. Lee (2009) integrated TAM, the theory of planned behaviour, perceived risks and perceived benefits to explore internet banking in Taiwan and found security/privacy and financial risks as negative influence on the intention to use the platform while perceived benefits, perceived usefulness and attitude affects intention to use the platform positively.

Also, Ayo et al. (2010) used an extended TAM to examine the effect of trust on e-payment adoption coupled with organization reputation, perceived risk as well as trust related to banks' management to determine customers' loyalty. The findings of their study revealed that aside from the TAM variables, other factors such as the reputation of the organization, trust and perceived risk are determinants of e-payments. Foon and Fah (2011) conducted a survey in Kuala Lumpur in 2011 and affirmed that the Unified Theory of Acceptance and Use of Technology (UTAUT) model is applicable to explaining the adoption of e-banking. Wang et al. (2012) integrated DIT and transaction cost theory to explore factors that influence the adoption behaviour of Web ATM in Taiwan and found perceived relative advantage, complexity, compatibility as well as perceived uncertainty and perceived transaction frequency as key determinants of user's adoption of this platform. Okiro and Ndungu (2013) adopted the Diffusion of Innovation Theory to investigate the impact of e-banking (mobile banking and internet banking) on the performance of financial institutions in Kenya. Their study revealed a lack of supportive infrastructure and legislation as inhibitors of internet banking

adoption, while system delays, slow processing time, high transaction costs, daily cash withdrawal limits and fraud are the hindrances of the mobile banking adoption. Another study conducted in Pakistan by Kazi, in 2013 adopted TAM to examine the factors that influence e-banking adoption among higher education students, revealed a positive influence of TAM variables on the intention to use the internet banking.

An empirical analysis of internet banking adoption in Tunisia by Nasri and Zarai (2014) were assessed based on TAM variables in addition to other variables such as social norm, security and privacy, and computer self-efficacy. The result of this study indicated security, privacy, customers' self-efficacy, and social influence as s determinant to customers' perceived ease of use. A recent study on ATM adoption in Nigeria by Asiegbu, Nwakanma and Etus (2015) revealed that all the five innovation attributes of the DIT have a significant effect on ATM adoption.

While available literature has explored various aspects of e-banking, there is yet an extended model of the DIT which tries to examine customers' behavioural intention by adding the cost variable to the "mix" of Roger's construct. Moreover, a comparative analysis of a developed world on e-banking starting point with a developing country is yet to be explored; an area which Bankole et al. (2010) identified as vital and suggested for future research. This gap is what the researcher has identified and intends to fill thereby making a significant contribution to knowledge.

In summary, this preliminary review has been able to establish the essence of this proposed research by outlining the aims and objectives of this study, a brief review of the research methodology as well as an overview of the research originality and the expected contribution to knowledge. A more detailed review of relevant literature will now be presented in the next chapter.

CHAPTER FOUR
LITERATURE REVIEW

4.0   INTRODUCTION

In this chapter, the researcher pinpoints the major occurrences that have impacted on the adoption of e-banking system, the notable steps towards the emergence of e-banking in the UK and in Nigeria, the driving forces for the adoption e-banking and a comparative analysis of the starting conditions of e-banking in both countries. Furthermore, the Diffusion of Innovation Theory propounded by Rogers (1995) will be examined to develop a theoretical underpinning for e-banking adoption in Nigeria.

4.1   IMPACTS OF MAJOR OCCURRENCES ON E-BANKING

Globalization and technological advancement are among the many crucial factors that have informed changes in various economies of the world. In line with Gidden's (1990) view, globalization actually intensified worldwide social networks in a manner in which local occurrences are now being influenced by events taking place several thousand miles away. This phenomenon in conjunction with the advances in ICT has led to the breakdown of barriers militating against various forms of relationships among countries, organizations and individuals (Salawu and Salawu, 2007). The ripple effects (such as: export and import of goods and services, wider adoption of international franchising arrangements, evolution of e-businesses) of these changes could be said to be profound in the economic sector amongst others.

Apart from the above phenomena which have influenced the economic sector in many countries of the world, Donwa and Odia (2011), indicated that the impact of various economic reforms on banking sector cannot be overemphasized. For instance, in the early 1980s, countries such as: New Zealand, UK, the USA, etc. identified the need to embrace some economic reforms and therefore introduced some strategic restructuring

such as: decentralization, privatization, corporatization, deregulation etc. to enhance their economy (Ferlie et al., 1996). Therefore, as a means to improving the banking sector of the UK economy, the UK banking industry was deregulated in the 1980s (Bank of England Quarterly Bulletin, (BEQB) 1983; Hasan and Taghavi, 2002). This era according to the BEQB (1983) was characterized by technological innovations such as electronic fund transfer and cash dispenser machines. It also facilitated a higher degree of competition between existing banks and building societies.

4.2   TOWARDS THE EMERGENCE OF E-BANKING IN THE UK

 In line with the assertion of Davies et al. (2010) the fundamental functions of financial services (which has to do with payment services such as provision of deposit and custodial accounts[4] and also an efficient means to ensure payments amongst companies and individuals) are relatively timeless, however, the attributes of the system providing these services continuously responds to changes posed by the economy and other regulatory developments.

Increase in domestic and foreign competition that evolved after 1960s in the UK mounted further pressure on the banking system. This occurrence transformed the entire banking industry. The UK banking sector started experiencing a gradual removal of the technological and institutional barriers that have over a long period of time restricted the union formed by depository institutions from competing. Following this development, banks had to revisit their strategic plans (Llewellyn, 1985; Channon, 1986; Consoli, 2005). It is on this note that the impact of the 1970s and 1980s deregulation, globalization, technology and financial innovation becomes vital when discussing the emergence of the UK electronic banking. This is therefore discussed in the next section.

---

[4] An account created on behalf of someone else usually for the benefit of a minor, managed by parent or legal guardian (USLegal.com)

4.2.1 The UK Banking Industry in the 1970s and 1980s

Jayawardhene and Foley, (2000) classified external influences on the UK banking sector as: economic, political, technological and social factors.

Economic Factor:

According to Buckle and Thompson (1992), the Bank of England introduced in 1971 a regulatory reform known as the competition and credit control. This reform removed the banking cartel which restricted prices and competition so as to promote competition between banks. This reform afforded deposit banks the opportunity to freely participate in wholesale market by eliminating the barriers that hitherto existed by the virtue of their operations through an intermediary. Further to this, the reform expanded the scope of special deposit and relaxed the liquidity assets from 28% to 12.5%. This resulted in increase in the competitive nature of clearing banks (Cameron, 1998). However, in the 1980s, more financial liberalisation was made possible as a result of the abolition of exchange controls as businesses had the privilege to relocate to overseas with less regulation and scrutiny (Davies et al. 2010).

This era thus, generated the prospect for major technological innovations in the banking industry in the provision of money transmission services (BEQB, 1983). Existing banks incorporated innovative ideas and utilized existing knowledge and infrastructure to launch new products and services (Melnick, 2000) e.g. telephone banking, electronic fund transfer at the point of sales terminal (B`atiz-Lazo and Wood, 2002 and Samakovitis, 2012).

The banking industry at this phase became more customer-oriented as opposed to the traditional banking that focused on the market and was non-competitive (Ennew, Wright and Watkins, 1990).

***Political Factor*:**

The increase in customers' rights through Legislation (e.g. UK Consumer Protection Act 1987) have impacted the kind of value that now being placed on customers, as such they (customers) are considered vital to the success of any business (Jayawardhene and Foley, 2000). Therefore, Jayawardhene and Foley noted that for banks to remain relevant and productive, it became imperative for them to adopt innovations that are not only tailored towards customers' demands but also gain their loyalty in the face of emerging competitive market.

Technological Factor:

While the modification of legislative framework such as banking deregulation increased customers' rights, technological advances served as an impetus for increase in customers' choices. In view of this, UK banks implemented and developed ICT so as to expand services and to cater for more customers. This era is quite significant in banking industry as customers can now with the aid of electronic devices, carry out banking transactions directly that were hitherto restricted to the bank's back office (B`atiz-Lazo and Wood, 2000; Consoli, 2005). For instance, the accessibility of customers to the internet created wider access to information which enabled customers to make a well-informed banking decision (Jayawardhene and Foley, 2000).

Social factor:

Llewellyn (1996) noted that the regulatory and economic shifts experienced in the UK in the 1980s are influenced to a large extent by demographic and social trends. The need for technologically induced services in the banking sector was envisaged based on the projected increase in the ageing population without a corresponding increase in young people entering the labour force. This development has been said to have a

affected the nature of banking services and the mode of delivery (Jayawardhene and Foley, 2000).

Following the above analysis, it can be said that e-banking in the UK emerged at such a crucial and timely phase of the banking industry. Figure 4.1 below shows a snapshot of the various trends in the UK banking industry which facilitated a move towards e-banking.

Figure 4.1: *Snapshot of innovations in the UK banking industry towards e-banking (1960s -1980s)*
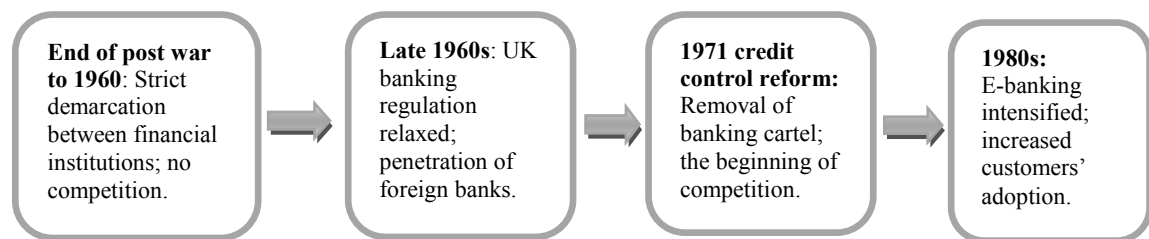
Sources: *Author generated from the analyses of Nellis and Lockhart, (1995) B`atiz-Lazo and Wood, (2002) and Samakovitis, (2012)*

Furthermore, Consoli, (2005), noted that by the 1980s the increasing cost advantage of electronic over paper-based transactions in the UK became much more evident as shown in the table 4.0 below.

Table 4.0: *Cost Advantage of Electronic Transaction over Paper Based*

Year	Number of Financial Institutions in UK	Total Number of branches	Paper transaction cost per unit (1999 UK £)	Electronic transaction cost per unit (1999 UK £)
1981	209	10,568	0.31	0.72
1990	354	12,994	0.54	0.51
1999	188	11,044	0.75	0.15

Sources: *Frazer and Vittas (1982); Morris (1986); Official Statistics UK (1994); OECD (2002); Consoli (2005)*

From the foregoing, it can be deduced that the UK evolution of e-banking has its root in the various financial services reforms coupled with the advancement in technology. This provided an enabling environment for banks to gradually explore and increase the

availability of emerging e-banking services as demanded by service users (BEQB, 1983).

4.3   TOWARDS THE EMERGENCE OF E-BANKING IN NIGERIA

Nigeria, also like the UK adopted some economic reforms that equally shaped the banking sector which resulted in the eventual emergence of electronic banking. For instance, as the Nigerian government liberalized the telecommunication sector (Afigbo et al. 2007) a number of other government corporations were privatized while some are in the process of being privatized (Bureau of Public Enterprises (BPE) Nigeria, 2009).

In addition, the liberalization of the telecommunication sector in Nigeria which took place before the banking reform of 2004 created an enabling environment for the emergence of an e-banking system in the country as the Nigerian telecommunication sector was liberalized in 2001 (Osibanjo and Nnorom, 2008). Prior to this economic reform, the Nigerian Telecommunication Limited (NITEL) established by the Nigerian government in 1984 enjoyed a monopoly where telecommunication services were concerned (Akinyomi and Tasie 2011) and Nigeria with a population of about 115million in 1999 had a record of 0.4 teledensity (i.e. 4 number of telephone lines were available per 1000 persons). Akinyomi and Tasie further argued that a review of the sector between 1987 and 1992 revealed an insignificant rate of development and poor service provision by the sector and this was the main driver for the federal government to liberalize the sector.

The liberalization of the telecommunication sector paved way for the introduction of the Global System for Mobile (GSM) Communication system in Nigeria (Idowu, Cornford and Bastin 2008) and enhanced massive inflow of electronic communication devices such as mobile phones and the emergence of privately owned telecommunication and Internet Service Providers (ISP) (Obe and Balogun, 2007). Osibanjo and Nnorom

(2008) noted that, by 2006 the teledensity in the country increased from the 1999 estimate of 0.4 to 10 and there has been a continuous increase as demonstrated in the table 4.1 below. A recent study by Okafor et al., (2016) on the analysis of teledensity growth model, indicated that the current teledensity of Nigerian is at 91.7%. This leap is however not surprising as Nigerians had been deprived of an effective means of telecommunication for so long.

The availability of these devices to the general populace made a significant impact on banking operations and services (Salawu and Salawu, 2007) as such banks in Nigeria had an opportunity to expand their range of products and services thereby, incorporating online retail banking services. In addition, services such as electronic fund transfer, mobile telephony etc. are now part of their products and services (Oluwagbemi et al. 2011 and Pedro, 2012).

Table 4.1: *Growth Rate of Teledensity in Nigeria between 2000 and 2013*

Year	Mobile Phones	Connected Lines	Teledensity %
2000	30,000	520,000	0.4
2001	266,461	866,782	0.73
2007	54,413,784	57,687,544	29.93
2009	58,286,444	65,514,537	46.80
2011(April)	103,347,158	117,303,160	64.70
2012 (December)	109,829,223	151,714,650	80.85
2013 (September)	118,470,236	171,961,525	86.62

Sources: *NCC, Nigeria 2013; Pascal, 2009 and the National Mirror 2012*

The above discussion points our attention to the fact that, the current state of the banking sector in Nigeria is not independent of what is happening globally, there are antecedents informing the structural changes and the current mode of operation in the banking industry (Adegbaju and Olokoyo, 2008). It could as well be inferred that the interconnectedness afforded by globalization, the advancement in IT, (Salawu and Salawu, 2007; Agwu, 2012), changes in economic policies (Sanusi 2012) etc. have all

influenced the trends in the banking sector as regards the available products and services and their mode of operation (Adegbaju and Olokoyo, 2008; Auta, 2010).

4.4 THE IMPACT OF CONSOLIDATION POLICY ON E-BANKING SERVICES ADOPTION IN NIGERIA

Apart from the changes that have taken place in the telecommunication sector, the Nigerian banking sector has equally experienced what Padoa-Schioppa (2001), regarded as a public policy paradigm shift from economic regulation to deregulation and prudential reregulation i.e. redesigning existing financial regulations in the banking industry.

According to Soludo (2006) and Agede (2011), the need for this prudential change in the Nigerian banking sector became imperative because of the following problems associated with the banking sector: lack of adequate corporate governance; insolvency (as capital adequacy ratio of some existing banks were negative); and a very high reliance on public sector and foreign exchange at the expense of their contribution to the private sector growth. Further to this, is the involvement of some banks in alleged unethical practices for instance, poor loan quality was prevalent among Nigerian banks. It was noted that about 21% of the stakeholders' funds were granted as loans as opposed to about 2% obtainable in countries such as America and Europe (Ibrahim et al., 2012). Therefore, to correct these anomalies wherein banks can serve as a catalyst to enhancing financial stability and economic growth in the country, the 2004 consolidation policy was introduced (Somoye, 2008; Sanusi, 2011, Ibrahim et al. 2012). Consolidation policy served as a regulatory framework which the Nigerian government used to safeguard the banking industry. The consolidation policy as stipulated by the Central Bank of Nigeria (CBN) mandated a new capital base for Nigerian banks (Barros and Caporale, 2012). The capital base for the total number of 89 banks operating as at

36

the time of this reform was increased from 2Billion Naira (about $12Million) to 25Billion Naira (about $155Million). Nigerian banks were given 18month window by the CBN to implement this policy (Okafor, 2012). This decision of the CBN was influenced by the general assessment of these banks, as the results according to Soludo (2006) indicated that Nigerian banks have low capital base; Over-relied on public sector deposits as well as foreign exchange trading; have weak corporate governance; and in the actual sense tend towards insolvency and illiquidity.

An assessment of this policy impact on competition by Okafor, Russell and Lawal (2012), indicated that the consolidation policy has yielded sustained competition, increased efficiency levels in the banking industry as well as a reduction in the spread of interest rates. Also, the evaluation of the impact of the policy by Olayinka and Farouk (2014); Adedeji, Babatunde and Adekanye (2015) revealed that consolidation has a significant positive impact on the performance of Nigerian banks. Furthermore, it was also indicated by Oluitan, Ashamu and Ogunkenu (2015) that recapitalization policy had a positive effect on the operational capability of the Nigeria banking system as it led to of economies of scale and through merger and acquisitions, banks now have greater access to the funds to intermediate more effectively. Based on the studies of Adewuyi (2011); Asiegbu, Nwakanma and Etus (2015), it can be concluded that these policy outcomes are not independent of the enabling capacities that the take up of e-banking channels by commercial banks afforded the banking industry. According to Adepoju and Alhassan, (2010), the policy served as a catalyst to increase the provision of e-banking services as the take up of these platforms enabled banks to gain a competitive advantage over their competitors (Oyewole at al., 2013) and also helped banks to survive the demands of the policy (Chiemeke et al., 2006).

4.5   CASH POLICY IN NIGERIA AND E-BANKING ADOPTION

According to the CBN (2015), the payment system plays a significant role in any economy as it stands as a platform upon which financial resources flow within segments of the economy. Based on this assertion, the payment system is a bedrock to modern market economy.   Considering this high level of importance of payment systems (Adeyeye, 2015), the CBN has taking more seriously the urge to increase the safety, efficient and the reliability of the country's payment systems and has thereby introduced a number of initiatives under the Payment Systems Vision 2020 project that started in 2007.

The Payment Systems Vision 2020 aimed at creating an e-payment infrastructure that is nationally utilized by all sectors of the Nigerian economy, adopted in all regions of the country and also internationally recognized as world class platforms (CBN, 2015). In view of this, the Payment Systems Vision 2020 was designed to provide a guide that looks at the infrastructure from the perspective of the end users, service providers, central bank, regulators and the international community.

Amongst the many initiatives under the Payment Systems Vision 2020 is the Cash Policy. This policy according to the CBN was put in place in order to:

❖ Accelerate the development and modernization of the Nigerian payment system in line with the payment systems vision 2020.

❖ To minimize the cost of banking services (cost of credit inclusive) and enhance financial inclusion by making provision for a better transaction options and greater reach.

❖ To improve the effectiveness of monetary policy where inflation management is concerned and to drive the economic growth.

The Cash policy also intends to counter the drawbacks associated with high usage of physical cash such as robbery, corruption, encouragement of money laundry, cash related frauds, inflation, deterrent of economic growth etc. To this effect, the policy introduced a cash handling charge on daily cumulative or single cash withdrawals or deposit that exceed N500, 000.00 for individuals and N3million for corporate bodies (irrespective of the channel of withdrawal) so as to reduce the amount of physical cash circulating the economy as well as to encourage the usage of e-payments options (Wuyah, and Akpan, 2015).

Further to this, third party cheques above N150, 000.00 can no longer be withdrawn over the counter but will have to be processed through the clearing house. CBN banned cash in transit (CIT) services by banks, only approved CIT companies are now authorized to provide such services. The policy stipulates that any cash withdrawal or deposit that exceeds the daily limits should attract cash handling charges. The excess amount over the N500, 000.00 individual daily cash deposit limit will attract a charge of 2% while a higher rate of 3% cash handling charge will apply to the excess amount on any withdrawal. For corporate organizations, a charge of 3% and 5% on daily excess applies on all deposit and withdrawals respectively (Proshare, 2013, Achor and Robert, 2013; Wuyah, and Akpan, 2015). According to Wuyah and Akpan, any banks that violate this CBN stipulation in the first instance are fined five times the charges waived and ten times at subsequent contraventions and any bank that pays out a third party cheque over the counter is liable to a fine up to 10% of the face value of the payout cheque or a sum of a N100, 000.00 depending on which amount is higher. However, government revenue generation account, microfinance banks, primary mortgage institutions and embassies were exempted from these rules.

The pilot study (regarded as the first phase of policy implementation) of this policy was launched on the 1st of January 2012 in Lagos state and the policy commenced fully a year after the Lagos pilot study (i.e. Jan. 1st, 2013) in an additional five states: Anambra, Abia, Rivers, Ogun and Kano coupled with the Federal; territory, Abuja. The cash policy became fully implemented across the nation in July 1st, 2014.

Therefore, apart from the 2005 bank consolidation policy which to a large extent served as a catalyst to the take up of various e-banking platforms in many commercial banks in Nigeria, the dictates of the CBN via the cash policy has intensified the provision of e-banking services by Nigerian banks as basic and specific/customized e-banking channels are now made available to both corporate and individual customers. While Omotunde, Sunday and John (2013) study on the influence on cashless policy in Nigeria reiterated the benefits of cash policy, an appraisal of this policy by Olajide (2012), Siyanbola, 2013, Ajayi, (2014); Ewa and Inah, (2016) revealed that the policy will enable a boost in the economy of Nigeria provided the infrastructure, more awareness to encourage greater banking culture among the "unbanked" as well as amongst the general public, improved level of literacy and effective legislation towards the mitigation of cybercrime are in place. Thus, contradicting the study conclusion of Omotunde, Sunday and John (2013) who noted that the cash policy was a step in the right direction as other studies have shown an empirical evidence against this perspective but an initial need for supportive technological infrastructure, legislation and security of platforms amongst others are the basic steps.

Figure 4.2 below shows the trend in the Nigerian banking sector regulation framework that intensified banks' adoption of e-banking systems.

Figure 4.2: *Trends of banking regulations in Nigeria*
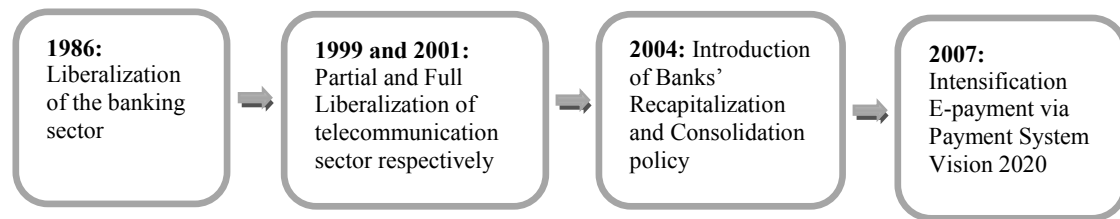
4.6   COMPARING E-BANKING SYSTEM IN NIGERIA AND THE UK

In an attempt to understand the diffusion of innovation of e-banking in Nigeria, this section intends to compare the evolution of this phenomenon in the two countries as a contributory factor to its adoption level.

The scenario in Nigeria: The deregulation of the banking sector in Nigeria in 1986 opened a platform for e-banking as "new generation banks[5]" realized that applying various forms of technologies utilized in other part of the world would be of great advantage to their banking services (Oluwagbwemi et al, 2011 & Asiegbu, Nwakanma and Etus (2015)). To this effect, Nigerian banks had to invest in ICT and adopted electronic and communication channels in order to enhance their mode of operation (Ayo et al. 2010; Adepoju and Alhassan, 2010 & Pedro, 2012). For instance, one of the first remarkable steps towards e-banking in Nigeria was the introduction of the ATM in November 1990 by the defunct Societe Generale Bank followed by the First bank of Nigeria in December, 1991 (Agboola, 2003).

In line with Chiemeke et al., (2006) and Adepoju and Alhassan, (2010), the role of e-banking is crucial for Nigerian banks to survive the competition in the post-consolidation era. Adewuyi (2011) & Asiegbu, Nwakanma and Etus (2015) noted that banks in Nigeria adopted e-banking services in a quest for survival, to maintain existing market share and to achieve sustainable development as well as to remain globally

---

[5] Commercial Banks that emerged in the 1980s: an era of massive increase in the number of commercial banks (Adenugba and Ilupeju, 2012)

relevant. Based on this, the existing banks have been able to expand the scope of e-banking services available to customers and as such products and services such as electronic fund transfer, online banking, mobile banking, debit cards, point of sales (POS) and ATM are now available (Adesina and Ayo, 2010, Siyabnola, 2013). The wider penetration percentage of internet use in Nigeria as indicated in the table 4.2 below has also been an enabling factor for banks' take up of these new products and services.

Table 4.2: *Internet penetration rates in Nigeria (2000 – 2016)*

Year	Internet Users**	Penetration (% of Pop)	Total Population
2016*	86,219,965	46.1 %	186,987,563
2015*	82,094,998	45.1 %	182,201,962
2014	75,746,751	42.7 %	177,475,986
2013	65,670,276	38 %	172,816,517
2012	55,182,852	32.8 %	168,240,403
2011	46,560,001	28.4 %	163,770,669
2010	38,261,938	24 %	159,424,742
2009	31,041,429	20 %	155,207,145
2008	23,966,947	15.9 %	151,115,683
2007	9,962,224	6.8 %	147,152,502
2006	7,947,035	5.5 %	143,318,011
2005	4,955,023	3.5 %	139,611,303
2004	1,749,576	1.3 %	136,033,321
2003	740,569	0.6 %	132,581,484
2002	414,185	0.3 %	129,246,283
2001	113,289	0.1 %	126,014,935
2000	78,740	0.1 %	122,876,723

Source: Internet Live Stats July, 2016
* estimate for July 1, 2016. ** Internet User = individual who can access the Internet at home, via any device type and connection

The scenario in the UK: The UK, unlike Nigeria, had electronic banking first introduced in 1950s and 1960s. According to Morris (1986) the automation of the clearing system as well as the retail money transfer mechanism (Mandell, 1990) was the first move towards banking automation in the UK. Thereafter, the introduction of the first credit card by Barclays bank in 1966 marked the new epoch of taking banking services outside the bricks of banks. E-banking was further intensified upon the advent of the ATM in the UK in 1970s. ATM has better security features compared to the cash dispenser machine that hitherto existed which was more prone to fraud due to loose security measures (Consoli, 2005). At this period, devices such as credit cards, automated teller machine cards, and cheque cards were available and by 1982, about 80% of customers have at least one of such cards. In addition to this, direct debit and automated credit transfer had been put in place (BEQB, 1983).

In the 1980s, an online banking called Homelink™ was initiated by the Bank of Scotland and the Nottingham Building Society. This however, did not succeed initially in terms of general acceptance (Tait and Davis, 1989). It started gaining popularity in the 1990s as banks utilized internet banking for commercial purposes (Consoli, 2005) and as such banks introduced additional forms of e-services delivery platforms such as internet banking (Daniel, 1999). Now, the current trend of online banking adoption in the UK has increased (Foon and Fah, 2011).

Although, the advancement in computer technology was regarded by Harden (2002), as the backbone to e-banking adoption in the UK, White and Nteli (2004) indicated that, the number of people connected to the internet is fundamental to the level of adoption of e-banking in the UK. However, it may be difficult to generalise this assertion as this may only be applicable to some types of e-banking services such as mobile phone banking; self-service (personal computer) banking and electronic funds transfer.

Customers do not need to connect to the internet to use other e-banking services such as POS, ATM, telephone banking etc. A critical analysis of White and Nteli's claim suggests that the adoption of e-banking by customers is not only a function of what the bank can offer but also what the customers and potential customers can afford (Mols, Bukh and Neilsen, 1999).

There has been significant change in this trend as a wider spread of internet users as shown in the table below has intensified a higher patronage of e-banking users in the UK. Table 4.3 below shows the percentage of internet users in the UK from the year 2000 to 2010.

Table 4.3: *Percentage of internet users in the UK*

Year	Internet Users**	Penetration (% of Pop)	Total Population
2016*	60,273,385	92.6 %	65,111,143
2015*	59,717,974	92.3 %	64,715,810
2014	58,933,948	91.6 %	64,331,348
2013	57,460,382	89.8 %	63,955,654
2012	55,614,329	87.5 %	63,573,766
2011	53,930,233	85.4 %	63,164,949
2010	53,309,181	85 %	62,716,684
2009	51,992,005	83.6 %	62,221,164
2008	48,358,493	78.4 %	61,689,620
2007	45,918,902	75.1 %	61,151,820
2006	41,738,539	68.8 %	60,648,850
2005	42,147,008	70 %	60,210,012
2004	39,265,109	65.6 %	59,846,226
2003	38,599,286	64.8 %	59,548,421
2002	33,493,338	56.5 %	59,301,235

Year	Internet Users**	Penetration (% of Pop)	Total Population
2001	19,780,705	33.5 %	59,080,221
2000	15,789,163	26.8 %	58,867,004

Source: Internet Live Stats July, 2016

* estimate for July 1, 2016. ** Internet User = individual who can access the Internet at home, via any device type

4.7   COMPARATIVE ANALYSIS OF E-BANKING STARTING POINTS

The researcher has identified certain factors as key to the discussion of banks' starting points of e-banking both in the UK and Nigeria following the findings of scholars such as: Nellis and Lockhart (1995), Safeena, Abdullah and Hema (2009), Jayawardhena and Foley, (2000), Chiemeke et al., (2006), Page, (2006), Adewuyi (2011) and the CBN report (2013). The comparative analysis will be conducted using these factors so as to enable vital lesson(s) to be drawn where necessary. These factors are: E-banking driving forces; banks' objectives; strategies adopted by banks; path dependency and the available complementary assets.

E-banking driving forces: The drive towards e-banking in the UK has been identified as a result of factors such as: advancement in ICT which serves as a major enabling factor for e-banking (Safeena, Abdullah and Hema, 2009). Another key driver of e-banking is the projected decrease in banking operational cost. This decrease in banks' operational cost according to Jayawardhena and Foley (2000) will result from a more effective and minimal reduction in workforce, equipment and work space which e-banking affords. Further to this, the impact of the regulatory reforms in the banking sector is also crucial to the drive towards e-banking as regulation that hitherto restricted the banking operations were relaxed (Buckle and Thompson, 1992). In addition, the emerging competitive market as noted by Nellis and Lockhart (1995) between banks,

45

building societies and the non-bank retailers such as Marks and Spencer could have served as a catalyst to a further e-banking take up in the UK in the 1990s.

In Nigeria, limited and in some cases non-existed e-banking services became more available by the virtue of the full liberalization of the telecommunication sector in 2001. This led to high inflow of electronic communication devices and the emergence of privately owned telecommunication and internet service providers (Obe and Balogun, 2007). The need for the country to have an effective and efficient banking system motivated the CBN to institute a reform policy known as the 2004 consolidation policy. This policy triggered banks' conscious move towards e-banking as a means to surviving the demands of this policy (Chiemeke et al., 2006 and Adepoju and Alhassan, 2010). Moreover, the CBN moves to developing a payment system that is nationally utilized and internationally recognised is also a key factor towards e-banking spread in the country (CBN, 2013).

Objectives of Banks: As noted by Nellis and Lockhart (1995) innovations such as e-banking in the UK banking industry became more necessary in the face of emerging competitive market so as to retain existing customers, increase customer base and also to maximize profit. The provision of multiple distribution channels which e-banking offers had to be innovated to suit different categories of customers (Jayawardhena and Foley, 2000). In the same vein, Nigerian banks incorporated e-banking in a bid to increase customer base and retain customers' loyalty more especially during the post-consolidation era (Chiemeke et al., 2006 and Adewuyi 2011). Another key factor to e-banking adoption in Nigeria by banks is to facilitate a payment system that will compete with international standards (Adewuyi, 2011).

Strategies Adopted by Banks: To enhance the spread of e-banking, banks in the UK had to utilise the internet the more for commercial purposes (Consoli, 2005). As such e-banking tools such as: bank cards, ATMs were introduced and other possible e-banking services in which the level of infrastructure affords e.g. Telephone banking. In the case of Nigeria, while banks were trying to provide e-banking services such as ATM and internet banking, and were sensitising customers to subscribe to e-banking, (Olatokun, and Igbinedion, 2009 and Kehide, 2014), the CBN vision of a cashless society resulted in a switch to e-payments systems by institutions providing payment services e.g. Interswitch. Other regulatory approaches were mandated by the CBN for banks e.g. limited cash withdrawals per day both for individual and corporate organizations as such any amount more than the specified are expected to be electronically transferred (CBN 2013)

Path Dependency: Path dependence according to Page (2006 pp.88) "means that a current and future states, actions, or decisions depend on the path of previous states, actions and decisions". Following this assertion in consideration of e-banking, it can be deduced that the current state of e-banking take up in both the UK and Nigeria could be a function of previous states, actions and decisions of all the stakeholders. In the same vein that Easterly, (2001) argued that path dependency helps to explain why a given country succeeds and others do not, path dependency may as well give a deeper insight into the disparities in the adoption rate of e-banking in the UK and Nigeria. Page (2006) noted that four related causes of path dependency have been identified in literature and they are: *1). increasing returns:* which means that the greater a choice or a given action, the greater the benefits. *2). self –reinforcement:* this has to do with a rise in benefits as more people make a particular choice. *3). positive feedback:* serves as a bonus to people who have made a choice or will make such choice in future. *4).* lock-in:

this signifies the fact that a greater number of people have made a choice or taken a certain action then such choice or action is better than the others.

Considering the adoption rate of e-banking in the UK, it could be said that stakeholders seems to have benefited from these four factors which have enhanced the adoption rate of e-banking services. For instance, as far as the concept of increasing returns is concerned, banks have been able to cut down operational cost (Jayawardhena and Foley, 2000) and compete favourably with emerging competitors (Nellis and Lockhart, 1995) customers on the other hand have overtime enjoyed a more effective and efficient e-banking services. In Nigeria, increasing return as regards e-banking services has not fully benefited the stakeholders. This is due to the fact that customers are yet to fully adopt e-banking services as expected despite efforts to increase adoption rate (CBN, 2013).

Complementary Assets:

Apart from the various governmental policies, the impacts of globalization which amongst other factors are vital to the adoption of e-banking in both the UK and Nigeria, e-banking requires certain complementary assets for proper functioning and effective usage. According to the perspectives of Teece (1986); Ceccagnoli and Rothaermel (2008), innovation encompasses some technical knowledge on how to improve on previously existing methods or channels. Therefore, for a given innovation to generate the expected profit/outcome it must be sold or utilized in a specific way. Thus, other capabilities and or tools: tangible and intangible assets (Lin, 2007) that are needed in conjunction with new innovation for successful commercialization are called complementary assets. Complementary assets could either be generic, specialized and co-specialist in nature.

48

Generic complementary assets: These are not specifically designed for the innovation because they can often be sourced for in the competitive market (Rothaermel and Hill, 2005).

Specialized complementary assets: These forms of assets have unilateral dependence with the innovation.

Co-specialized complementary assets: These are joint assets that will be utilized for innovation to diffuse.

As far as e-banking is concerned, certain complementary assets are needed for its successful operation and commercialization such as: ICT (Consoli, 2008); internet facilities; telecommunication devices, power supply (Agboola, 2003) media, enabling government regulations/economic environment etc. The availability of these complementary assets determines the level and rates of adoption of e-banking.

In the UK, the availability of a well laid out telecommunication network at the onset of e-banking served as an added advantage to the smooth take up of e-banking services both to the banks and to customers. In the case of Nigeria, while liberalization of the telecommunication sector in 2001 resulted in high inflow of electronic communication devices and the emergent of privately owned telecommunication and internet service providers (Obe and Balogun, 2007, the telecommunication networks that existed prior to the take up of e-banking in the country was inefficient (Akinyomi and Tasie 2011 & Chidozie, Lawal, and Ajayi, 2015). Table 4.4 below shows the comparison of these factors.

Table 4.4: *Comparative framework of e-banking in the UK and Nigeria*

Comparative Variables	UK	Nigeria	Common Features/Differences in both countries
Time of emergence	1960s	1990s	*Different Timing: considering the level of technological advancement and the natures of electronic devises which supports e-banking services available in Nigeria unlike the UK at the time of take up, a greater embrace of e-banking in Nigeria should have evolved*
Driving forces	Change in market environment from 1971 i.e. the impact of the various banking reforms; Changes in customers' preferences of financial intermediation; Changes in portfolio preferences on the part of providers of financial services intermediation i.e. a competitive profit-oriented move (Buckle and Thompson, 1992) Advancement in Information technology (Safeena, Abdullah and Hema, 2009) Growth of non-bank financial retailers (Nellis and Lockhart, 1995)	The liberalization of telecommunication sector; The influx of telecommunication devices (Obe and Balogun, 2007). Growing rate of internet service providers (ISP) Enactment of banking reform: the 2004 consolidation policy Chiemeke et al. (2006) Need for a payment system that is nationally utilised and internationally recognised CBN, (2013)	*Economic reforms and ICT are crucial to e-banking adoption in both countries.* *Take up in both countries were for competitive benefits* *Nigerian banks unlike the UK seems to be pressurized to e-banking take up considering the effect of 2004 consolidation and the 2007 Payment Vision 2020*
Objectives of Banks	To facilitate better competition among banks and non-financial institution and enhance profit. To increase efficient and more effective banking services. To reduce banks' running cost and ensure wider customer coverage (Jayawardhena and Foley, 2000)	To survive the competitive era of post consolidation (Chiemeke et al., 2006 and Adewuyi 2011). To minimize banks' running cost and increase profit. To increase efficient and more effective banking services (Salawu and Salawu, 2007). To enable a wider customer coverage. To maintain existing market share (Asiegbu, Nwakanma and Etus, 2015) To meet up with	*Competition in the UK was more between banks and non-financial institution unlike Nigeria that is mainly among banks* *Both were efficiency oriented.* *Unlike the scenario in Nigeria, banks in the UK were not under the pressure to meet the international standards but efforts were mainly geared towards a better customer service*

Comparative Variables	UK	Nigeria	Common Features/Differences in both countries
		international expectation (Adewuyi 2011)	
Adopted Strategies by banks	Utilization of existing knowledge and infrastructures e.g. telephone for telephone banking Additional investment in ICT Utilization of internet banking for commercial purposes (Consoli, 2005) Introduction of various bank cards (credit and debit cards) Introduction of various e-banking services as afforded by the current level of technology and infrastructure.	Investment in ICT by banks (Ayo et al. 2010; Pedro, 2012). Provision of ATM and ATM cards to customers CBN introduction of cashless policy and Payment System Vision 2020 CBN (CBN website 2013). Switch to e-payment system by institutions providing payment services e.g. NIBSS, Interswitch, Unified Payment Services Limited, SystemSpecs etc. (CBN, 2013)	*Investment in ICT* *Innovation of various products and e-banking services* *Unlike the UK, the switch to e-payment was mandated by the CBN not for the banks' perceived benefits and comfort*
Path dependency	There has been a history of a gradual introduction of electronic devices in the UK banking industry. These serves as a catalyst to a wide embrace of e-banking services (see appendix 1). Thus, a connection before what hitherto existed and the current banking status.	Previous actions and decisions in the banking industry have not supported the take up of e-banking. (see figures 4.2) The liberalization policy and the consolidation policy brought about a new epoch in the industry (Padoa-Schioppa, 2001)	*The UK unlike Nigeria has a banking history that supported the take-up of e-banking services*
Available complementary assets	Intra-banks network (BEQB, 1983). Telecommunication networks	Poor telecommunication networks by NITEL (Akinyomi and Tasie 2011).	*While UK had a proper layout of telecommunication network (Bob telephone files, 2013), prior to e-banking adoption Nigeria telecommunication network was inefficient (Akinyomi and Tasie 2011).*

Table 4.4 above is an overview of the starting points of e-banking in Nigeria and the UK. This comparison shows a disparity in what informed banks' introduction of e-banking services in both countries. In sum, while Nigerian banks tend to drive towards e-banking as a means to survive the highly competitive market and in the process, satisfy customers' appetite for a better and efficient banking service delivery (Salawu

and Salawu, 2007), the UK banks' take up of e-banking differs as removal of the strict regulatory framework afforded banks the opportunity to make use of existing knowledge and infrastructures and incorporate innovative ideas that further embraced a wider use of e-banking.

Considering customers' perception of e-banking acceptance, the level of acceptance in UK has been influenced by the level of literacy, and accessibility to internet facilities (Howcrofth et al. 2002). White and Nteli, (2004) also attributed the following as contributory elements to e-banking acceptance in the UK: security associated with bank websites, responsiveness of service delivery, user friendly nature of banks website and the integrity of internet banking provider. In Nigeria, studies conducted so far in this direction determined that perceived risk, ease associated with its usage, accessibility cost and infrastructural development are hindering customers' satisfaction of e-banking services thereby limiting the level of adoption of these platforms (Ayo, 2006; Oni and Ayo, 2010, Ogunlowore and Oladele, 2014 and Egwu, 2015).

Although, Ojeka and Ikpefan, (2011) found that upon the enactment of the recapitalization and consolidation policy in Nigeria in 2005, one of the profound attributes of the surviving banks were those that they have been actively engaged in the utilization of ICT to provide e-banking services. This is because their incorporation of some of these services such as the ATM increased their level of efficiency and effectiveness thereby drawing more customers to themselves. On this note, it would have been expected that e-banking should have gained much ground in terms of customers' level of acceptance considering the rate at which e-banking boosted banks' efficiency and effectiveness upon its introduction. Further to this, the 2007 Payment Vision 2020 and the 2011 Cash Policy introduced by the CBN were particularly directed towards increasing e-payment transactions (Sanusi, 2012; Yaqub et al., 2013).

However, studies found that, integrating customers into e-banking has been challenging as a result of factors such as lack of e-readiness and substantial security guidelines (Pedro, 2012, Tunmibi and Falayi (2013,) and also low level of literacy according to Oyeleye, Sanni and Shittu, (2015).

Recent studies in Nigeria by Okechi and Kepeghom (2013), Yaqub et al., (2013) Mohammed and Dada, (2014), Tarhini et al. (2015) AG Partnerships (2015) etc., revealed a disparity in the usage of e-banking services by customers as a larger percentage of service users currently tend towards the utilization of the ATM (see figure 4.3 below) despite the availability of other e-banking platforms such as POS terminals, online banking, telephone banking, electronic cards (Siyanbola, 2013). For instance, Adeoti and Osotimehin (2012), indicated that ATM remained the most patronized e-banking platform accounting for over 80% of the total volume and value of e-payment transactions. According to them, while ATM recorded 49,671 and N285.87 billion respectively, the volume of mobile banking transactions was 7,471,388 and the value was N10.30 billion. The POS patronage was much lower with volume of transactions at recorded at 627,314 and the value at N7.8 billion. Also, in terms of value of transactions, Abubakar, Shagari, And Olusegun, (2015) noted that ATM accounted for 90.8% followed by the POS, which is 4.0% and then the mobile payment at 3.7% while that for online transaction is 1.5%.

Further to this, the high penetration of mobile phones (Yu, 2012) should have also facilitated a significant increase in the adoption of mobile banking than what is currently obtainable. A press report shows that Guaranty Trust Bank (GTB): one of the leading commercial banks in Nigeria published in a national newspaper the need for customers to patronize these other e-banking channels that the bank has equally put in place as the benefits were further reiterated while allaying the perceived fears of

customers (Thisday newspaper, 2013). This newspaper publication seems to have endorsed the e-banking inhibitors identified by Ayo (2010), Tunmibi and Falayi (2013); Egwu, (2015), who pinpointed factors such as: lack of awareness; lack of e-payment facilities/structure and perceived risk as hindrances to the widespread usage of other e-banking products and services. Despite the proactive moves by banks and the CBN to enhance greater patronage of e-banking platforms by bank customers, the country is still very much cash-oriented (CBN, 2013). As indicated in figure 4.3 there has not been significance difference in the level of adoption recorded in 2011 by the CBN and current data. This suggests that customers prefer to withdraw cash to make payments for transactions rather than utilizing electronic means of payments such as POS and online.

Figure 4.3: *Mode of Payments in Nigeria*
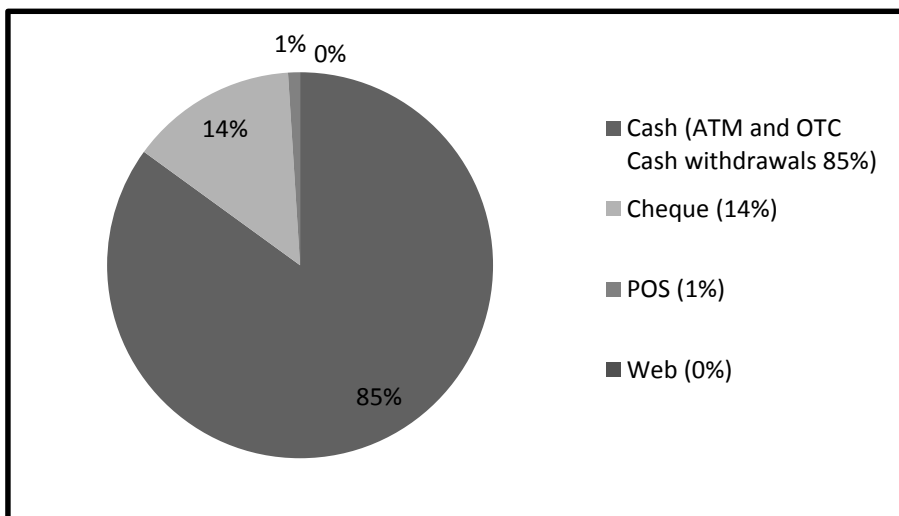
Source: *CBN (2011) New Cash Policy Engagement Session: Cashless Lagos Implementation*

Conclusions:

In the last two sections, the starting points for e-banking in both countries have been identified. Comparisons have been made and key lessons have been drawn out. These key lessons regarding certain variations in the starting points of e-banking by commercial banks in the UK and Nigeria have supported and also provided further

insight to the low levels of customers' adoption of e-banking in Nigeria. Therefore, to further explore other factors that may predict e-banking levels of adoption in Nigeria from the perspectives of the services users (individual bank customer) and the service providers (commercial banks) the study will proceed to the second part of this research by investigating the significance of the extended DIT model on the levels of e-banking adoption in Nigeria. This extended model entails the addition of a "cost variables" to the mix of Rogers's five attributes of innovation diffusion (i.e. relative advantage, complexity, compatibility, trialability and observability). Therefore, in the next three sections, discussion will be based on this theoretical perspective in line with the state of e-banking Nigeria.

4.8   THE THEORETICAL PERSPECTIVE OF THE STUDY

A theory enables the visualization of complex social realities in order to explain why things happen (Neuman, 2006). Various theories have been propounded to predict the complexity of human behaviour regarding adoption pattern and use of new technologies (Alomary and Woollard, 2015). Theories such as the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975), Theory of Planned Behaviour (Ajzen, 1991), Technology Acceptance Model (TAM) (Davis, 1989), the Diffusion of Innovation Theory (DIT) (Rogers, 1995) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003) are some of the major theoretical models generally utilised to explain technology acceptance and use, each of these theories has its own specific attributes and emphasis (Alomary and Woollard, 2015) often used to investigate factors that contribute to the behavioural intention of customers regarding innovation adoption (Yu, 2012).

The Theory of Reasoned Action (TRA) has its root in social psychology (Alsughayir and Albarq, 2013). TRA has been widely adopted to explain a range of consumer

behaviour (Southey, 2011). The proponents of this theory assumed that behaviour towards a given object is a function of the intention to perform such behaviour (Alsughayir and Albarq, 2013). Given that individuals are rational beings and would normally make use of available information and also consider the implication of their actions before making decisions, the theory emphasises the behavioural intentions as opposed to the attitudes of individuals as the main predictor of behaviour (Fishbein and Ajzen, 1975). Intentions that propel behaviour are defined as a conscious plan which an individual directs in an effort so as to carry out a particular behaviour (Eagly and Chaiken, 1993). Based on these premises Fishbein and Ajzen, (1975), indicated that behaviour and outcome could be predicted, and the intention is dependent on the following two factors:

❖ The attitude of individual to the outcome of the behaviour.

❖ The subjective norms of the social environment which the individual is situated.

This study could have adopted TRA to explain e-banking adoption in Nigeria however, the inherent limitations of the theory posed a challenge. TRA does not explain all the mechanisms that predict the actual use a given innovation. While the theory, provides the theoretical association between belief and intention, little attention is given to how beliefs are formed or changed, but that intentions and attitudes may change as a result of changes in beliefs (Orr, Thrush and Plaut, 2013). The theory does not accommodate the main concern of this study which is to explore factors that could predict change from the traditional banking system to e-banking adoption by individual bank customers. Also, one of its greatest flaws noted by (Ajzen, 1991), was based on people who have or feel they have little power over their behaviour since TRA was based on the assumption that when people form an intention to carry out a behaviour they are free to do so without any form of constraint (i.e. complete volitional control). Critics

noted that in reality, factors such as the ability of individual, environmental issues, policies, etc. could pose limitations (Hale, Householder and Greene, 2002). For instance, the intention of individual bank customers in Nigeria, to adopt e-banking has been influenced by the introduction of the cash policy by the CBN. The policy overrides voluntary adoption of e-banking by individual bank customers. For example, charges are levied on over the counter withdrawals on amount that can be withdrawn from the ATM. Therefore, such penalty infringes on the freedom of behavioural intentions as individual customers now use the ATM in a bid to avoid charges. The recognition of TRA limitation as a result of incomplete volitional control led to the modification of this theory by Ajzen in 1991. Ajzen added a third construct known as Perceived Behavioural Control to the TRA to form a new theory called Theory of Planned Behaviour (TPB) so as to explain and also predict human behaviour in a specific context. Although scholars such as Jimmieson, Peach and White (2008) adopted TPB in their study to examine the intentions of employees to support organisational change, and Truong (2009) also noted that the model is effective in predicting adoption of technology as his study also confirmed TPB as a viable model in predicting acceptance of online video services in France, the limitation of this theory made it inadequate to explain e-banking adoption in Nigeria. According to Kraft, et al. (2005) conceptualizing the defining construct of the TPB (i.e. Perceived Behavioural Control) is controversial. Also, TPB assumes that actual behavioural control is dependent on Perceived Behavioural Control which may not always be the case.

Davis (1989) developed TAM to study users' adoption of computer technology and the model has been widely used to explain and predict technology innovation adoption (Chen, Li and Li, 2011). According to Han (2003), TAM is a casual model that utilised TRA as a theoretical basis to showcase any causal relationship between:

A - Perceived Usefulness (PU), Perceived ease of use (PEOU) and

B - User's attitude, Behavioural intentions and the actual computer adoption and usage behaviour.

In other words, the behavioural intentions of users and attitudes towards the use of technology can be predicted by the two internal variables i.e. PU and PEOU (Alharbi and Drew, 2014).

TAM also in line of the TRA and TPB, emphasised Behavioural Intention (BI) has a major factor that influence adoption behaviour. According to TAM, Perceived Usefulness (PU), Perceived ease of use (PEOU) towards a given technology predict the attitude of users and subsequent behavioural intentions and the actual usage (Masrom, 2007). Davis (1989) defined PU as the extent to which the user of a new technology believes that using such innovation will improve work performance. He conceptualised PEOU as the perception that the new technology is free of mental effort. Thus, the easier it is to use a system, the greater the perception of its positive impact on performance (Han, 2003). However, Khan and Woolsey (2011) noted that TAM is more basic as it considers only two constructs. While it has been widely used in many research studies, scholars such as Chuttur, 2009, Gefen, and Straub, (2000) stated that TAM lacks rigor and relevance. Although Davis et al. (1989) advised that the model should be applied in other contexts, this study did not utilize TAM because previous studies indicated that the model explains only about forty-percent of information technology usage (Hu et al., 1999). Therefore, scholars such as Legris et al., (2003); McCarthy, Aronson, and Petrausch, (2004) stated that the model may need to be extended to incorporate human and social factors.

UTAUT, which is another theoretical model evolved according to Algharibi and Arvanitis (2011), as a result of gradual improvement in TAM. In comparing the model

with TAM, Marchewka, Liu and Kostiwa (2007) stated that UTAUT is a better model as it accounts for seventy percent of the variance in usage intention. Venkatesh, et al. (2003), developed UTAUT through a review and integration of the following eight dominant theories: TRA; TAM; TPB; Model of PC Utilization (MPCU) (developed by Thompson, et al., 1991); Motivational Model propounded (Davis, et al. 1992); combined TAM and TPB (Taylor and Todd, 1995); Diffusion of Innovation Theory and Social Cognitive Theory. UTAUT therefore, brings together alternative views of users and the adoption of innovation by developing four main constructs: Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions as direct determinants of behavioural intention which in turn inform behaviour. Worthy of note is that the key constructs in old theories were renamed in UTAUT. For instance, the Perceived Usefulness (PU) and the Perceived Ease of Use (PEOU) in TAM were changed to Performance Expectancy and Effort Expectancy respectively. The Subjective Norm construct in TRA became Social Influence (Algharibi and Arvanitis, 2011). Venkatesh et al., (2003) defined the four constructs of UTAUT as follows:

- ❖ Performance Expectancy - The belief that the adoption of innovation will enhance job performance.

- ❖ Effort Expectancy - This is the degree of ease of use that individual associates with the use of the innovation.

- ❖ Social Influence - This construct has to do with the extent to which the beliefs of others influence the adoption of the innovation

- ❖ Facilitating Conditions - This is the extent to which an individual believes that the organisational and technical infrastructure in existence supports the use of the innovation.

These constructs are moderated by gender, age, experience, and voluntariness of use (Williams, Rana, and Dwivedi, 2015). Venkatesh et al., (2003), indicated the investigation of the effect of these constructs in a "real world" environment, will enable researchers and practitioners assess the intention of an individual about the use of innovation, thereby identifying the main influence on acceptance in any given context. While the utilization of this model would have yielded an enhanced knowledge of e-banking adoption in Nigeria by individual bank customers, Marchewka, Liu and Kostiwa (2007) pointed that the initial UTUAT study focused large on organizations, moreover, the scales used were new (UTUAT combined previous scales) thus, the suitability of these scales need further validation. Despite the wide acceptance of this model, scholars' claim about the inadequacy of this model can be substantiated by the subsequent additions of three other constructs (i.e. hedonic motivation, price value, and habit) by Venkatesh, Thong and Xu (2012) to the model thereby expanding UTAUT to UTAUT2 so as to improve the degree of variance that the model can explain. The consideration of UTAUT2 for this study will shift the main emphasis of this research as constructs embedded in UTAUT2 may be too ambiguous and inappropriate at the moment. For instance, exploring e-banking adoption by individual bank customers in Nigeria based on hedonic motivation which is defined as the pleasure derived from using technology (Brown and Venkatesh 2005) will not fit the purpose of this study. This is because e-banking penetration as established by the literature is still low as such, a lot of bank customers have not had the opportunity to utilise these services let alone increasing patronage based on their feelings of the pleasure derived from the using them.

Therefore, what may be more appropriate to consider at this stage is the perceptions of individual bank customers towards these platforms as a motivating factor to drawing

towards adoption, subsequent patronage and continued patronage. These attributes are more profound in the Diffusion of Innovation Theory (DIT) propounded by Rogers (1995). DIT according to Rogers (1995) predicts technological innovation adoption based on five innovation attributes: *relative advantage; compatibility; complexity; trialability* and *observability*. However, this theoretical perspective has a number of weaknesses just like other theories previously discussed. Rogers (1995) acknowledged that despite that numerous important contributions the theory has made to the understanding of human and behavioural change, the potential would have been greater but for the inherent shortcomings. These criticisms are discussed in section 4.8.1 below.

4.8.1 Criticisms of the Diffusion of Innovation Theory

1. Pro-innovation Bias was identified as one of the serious shortcomings of diffusion research (Goss, 1979). This problem according to Rogers and Shoemaker (1971), was one of the first biases to be recognized. Pro-innovation bias implies that an innovation should be diffused rapidly and adopted by all members of a social system, this also suggests that innovation should neither be re-invented nor rejected (Rogers, 1995). According to Rogers, the non-recognition of pro-innovation bias causes researchers to overlook the study of ignorance about a given innovation, to underemphasize the rejection or discontinuance of innovation, to ignore re-invention and to fail to study anti-diffusion programmes tailored to prevent the spread of "bad" innovations. For instance, the pro-innovation bias was further justified by Goss (1979) who observed that the application of innovation diffusion theory had undesirable consequences in developing countries. For instance, in Latin America, the application of the theory widened inequities (Goss, 1979). This result indicates that there may be tendency for Pro-innovation bias to be manifest in the study of e-banking adoption in Nigeria.

However, this research has been able to cater for pro-innovation bias because the researcher was able to identify from the literature that e-banking innovation could not have diffused rapidly nor be adopted by all members of the system as such the focus of the research was basically to consider the perception of various individual bank customers in Nigeria as a fundamental yardstick to evaluating the current level of e-banking diffusion.

2. Individual-blame Bias is another criticism of the innovation theory. This suggests that the variables used in a diffusion model to predict innovativeness are based on success or failure of the individual within the system rather than the system itself (Havens, 1975). Rogers (1995) also noted that rarely will channels of innovation be blamed for: inadequate provision of information; enhancing inappropriate innovations; or failing to get in touch with less educated members of the community who may greatly need the help. Thus, late adopter and laggards are usually individually blamed for being reluctant to adopt a given innovation whereas Chatterjee (2013) noted that quite often, it is the characteristics of the innovation that compel people to be laggards. Rogers (1995) suggested a research approach that also emphasised system-blame so as to explore whether the source of innovation was properly directed to the needs of later adopters and also to examine if the change agent considers the life situation of the later adopters. Worthy of note is the fact that the focus of this study is on the perception of the respondents about the e-banking adoption in Nigeria not on adopters' categorization. In this sense, this study has been able to manage this bias by not just focusing on the perception of individual bank customers regarding e-banking adoption (the service users) but also investigated the perception of key e-banking officials (service providers). This dual approach was used to minimise individual-blame bias as

both concerned individuals and the e-banking system in the country were considered thereby emphasizing "system-blame" as suggested by Rogers (1995).

3. The Recall Problem was equally identified as one of the drawbacks of diffusion research (Haider and Kreps, 2004). This is based on the premise that respondents may have difficulty to recall accurately after an elapsed time. This is because obtaining data from respondents usually necessitates a request for respondents to reconstruct history to trace the time of adoption/innovation experience. Critics such as (Coughenour, 1965; Haider and Kreps, 2004) indicated that this hindsight ability is not completely accurate for a typical respondent. However, Rogers suggested that *field experiments; longitudinal panel studies*; *use of archives* and *case studies of innovation processes from multiple respondents* are more appropriate measures to guard against the recall problem as these methodologies reflect the time dimension more accurately. The consideration of the of e-banking starting points with the aid of secondary sources of data and the investigation of e-banking take-up by commercial banks from multiple e-banking officials were the two major methodological approaches that this research utilized to minimise recall problem.

4. The Issue of Equality is a further criticism of the diffusion research. Diffusion research has been noted to widen the socio-economic gap between the lower and the higher classes of a social system especially in the third world countries (Stephenson, 2003). This is because the development agencies tend to offer assistance more to the innovative; rich; educated; and information driven clients (Rogers, 1995). However, Shingi and Mody (1976) and Roling et al (1976) suggest that effective communication strategies will narrow down the socio-economic gap. Considering that the main focus of this study is on the perception of respondents about e-banking adoption, the opinion of the research participants was sought without any special consideration of their social

economic status thereby the possibility of widening or promoting inequality was not applicable to this study.

Apart from the fact that this study recognises the main pitfalls of this theory and has been able to manage/avoid the possible negative implications these may pose on the practicality of this study, the DIT has been specifically adopted in this study because scholars such as Ndubisi and Sinti (2006); Zolait and Ainin (2008) and Eriksson et al. (2008) consider the application of the DIT as more relevant to the understanding of customers' intention to adopt e-banking services, DIT was better appreciated for explaining further the types of usage and continued usage, i.e. customers' first exposure to the innovation, customers' interest in the innovation, customers' decision to use the innovation, customers' realization of the usefulness of the innovation and desire for more information about the innovation and finally, customers' decision to continue or discontinue the use of the innovation (Rogers, 1995).

Furthermore, the aspect of the DIT that this study utilizes is the five innovation attributes (i.e. the perception of respondents about these attributes) and Stephenson (2003) indicated that these innovation attributes identified by Rogers remained one of the viable portions of the theory over the years thus, the very core reason for adopting this theoretical stance amongst others. A discussion of the DIT in relation to this study is provided in the following two sections.

4.9   ROGERS' DIFFUSION OF INNOVATION THEORY

According to Rogers (1995), components of an innovation determine the rate of adoption. The rate of adoption has to do with speed at which a given innovation is adopted usually measured over a period of time based on the number of users. Rogers conceptualized five main variables that determine the rate of adoption of a given innovation. These variables are as follows:

- ❖ The perceived attributes of innovations

- ❖ The types of innovation decision

- ❖ The communication channels

- ❖ The nature of the social system

- ❖ The extent of change agents' promotion efforts

For Rogers, the first variable which is the level of perceived attributes of innovation is a major component amongst these variables. 49 to 87% of the variance of adoption was attributed to the variable and this particular variable consists of the following five attributes; relative advantage, compatibility, complexity, triability and observability (Rogers, 1995). A higher level of importance has been attributed to this very factor following the ideology of Thomas and Thomas (1928) which states that if men define situations as real, they are real in their consequences. Therefore, it is the subjective interpretation of a given situation that serves as a catalyst to the subsequent action. This assertion, attached more importance to an individual's perception of any innovation.

Using the Ajzen, 1985 theory of planned behaviour and the 1983 diffusion of innovations theory of Rogers as their research framework, Tan and Teo, (2000) found out in their research, carried out in Singapore, that attitudinal and perceived behavioural control factors influence internet banking rather than social influences, thus variables such as relative advantage, compatibility, trialability and risks towards internet adoption remained of significant influence.

Tan and Teo, (2000), in their study, omitted Rogers' concept of observability, as they are of the opinion that this is not relevant where e-banking is concerned because of the privacy factor banking involves, critical evaluation of this factor suggests that the level of efficiency and the various amounts of additional services which e-banking affords

are quite observable and the fact that this could be observed and compared to what was hitherto obtainable could draws more customers to e-banking adoption.

Rogers (1995), also classified adopters into five categories which move along a continuum (see figure 4.4 below). The categorization are as follows:

1. *Innovators*: This group according to Rogers are risk takers and are willing and able to invest time and energy in new innovations. Innovators are usually a tiny segment of the entire population and are estimated to be about 2.5% of the entire population. Fill (2005), noted that innovators often have strong financial backing that could cushion the financial cost should the innovation turn out to be unprofitable.

2. *Early Adopters:* According to Rogers, this group usually recognize the need for change and are usually comfortable with new ideas. They constitute about 13.5% of the population.

3. Early Majority: The underlining attributes of the late majority are those that will need to see the evidence of success before they can consider adopting the innovation. They are a larger part of the population as they constitute about 34%.

4. Late Majority: The Late majority adopters like the early majority are also estimated to be about 34% of the population. This category of adopters will only adopt an innovation having been tried and accepted by a larger part of the population.

5. Laggards: The Laggards are usually resistant to change and very sceptical of change. They constitute 16% of the population.

Figure 4.4: *Rogers' Categorization of Innovation Adopters*
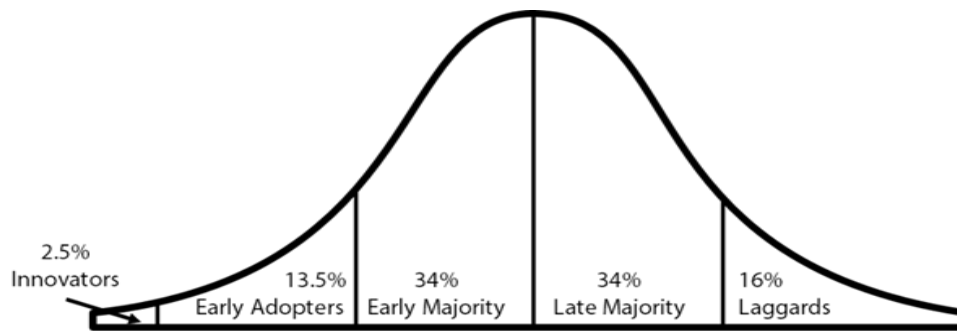
4.9.1   DIFFUSION OF INNOVATION THEORY AND THE BANKING INDUSTRY

According to Al-Jabril and Sohail, (2012), DIT could be regarded as one of the most popular theories that has been used to investigate factors that affect individual adoption of innovation technology. A considerable number of studies have adopted DIT to investigate different aspects of banking services in different parts of the world. Rambocas and Arjoon (2012) adopted DIT to investigate customers' loyalty for internet banking in Trinidad and Tobago. Following the findings of their research the need to incorporate the peculiar role of the *consumer trust* and *governmental support* to facilitate customers' loyal tendencies became necessary. Therefore, Rambocas and Arjoon extended DIT model by adding these two variables.

Okiro and Ndungu (2013) also adopted DIT model to evaluate the impact of both the mobile and the internet banking on the performance of financial institutions in Kenya. Their study revealed that factors such as infrastructure, slow processing time, high transaction costs and fraud are also contributory factors to the low adoption of these two platforms. In 2014, Manoranjan, Pradhan and Snigdha conducted a study in India, where they adopted DIT to integrate the customer's attitude and social environmental factors with DIT innovation attributes in widening the applicability to mobile banking in India. The findings of this research revealed that this integration proffer a better

understanding of the commercial viability of mobile banking. Also, Cudjoe, Anim and Nyanyofio study in 2015 on the Determinants of Mobile Banking Adoption in the Ghanaian Banking Industry indicated the significance of some of the elements of DIT as significant effect on consumers' intention to adopt and use mobile banking services. Furthermore, in exploring the mobile banking adoption in Lebanon, Audi et al., (2016) adopted both the DIT and the TAM. The significance of the DIT variables in their study also further strengthen the relevance of the model in the recent studies about innovations in the banking sector.

However, previous studies such as Khalil, Barbuta-Misu and Stroe, (2008); Wang et al, (2012) have indicated the need for this model to be extended in a bid to incorporate the cost implication for the adoption of a given innovation by end users. For instance, Wang et al, (2012) study in Taiwan noted the necessity to consider the cost of complementary assets (e.g. IC card reader) incurred by e-banking service users as this may impact on the levels of adoption of e-banking services. Based on the level of importance that has been attached to cost in this regard, this study will extend the DIT model by the addition of "cost variables". These variables are discussed in section 4.11 below. In the next section, discussion on the conceptualization of the five innovation attributes on relation to this research study will be presented.

4.10   CONCEPTUALIZATION OF THE ROGERS' FIVE PERCEIVED ATTRIBUTES AND THE NIGERIAN BANKING INDUSTRY

Relative Advantage - This variable, according to Rogers has to do with how customers perceive the advantage of the innovation over what was previously in place. According to Asher (1999); Jayawardhena and Foley (2000); Sanusi (2012), banks attain cost and efficiency gains by the virtue of e-banking evolution. A notable example is the impact e-banking has on minimising the cost of associated damage to paper money (e.g. costs

of taking out damaged paper money out of circulation and its replacement). Sanusi, (2012) noted that CBN have had to introduce, as part of the on-going banking reform, a 'Cash Less Policy' in a bid to minimize cash transaction cost, considering the fact that the country is cash oriented, it became imperative to encourage and facilitates e-transactions so as to reduce banking sector operational cost. These costs are borne in the process of managing and transporting cash, sorting and printing of currency. Estimates as at 2012 revealed that about 192million Naira was expended by the industry to manage cash in the system. It is believed that this cost can be greatly reduced if more e-banking activities are encouraged.

Further to this, Ojeka and Ikpefan (2011) noted that pioneers of e-banking banking system in Nigeria saw e-banking adoption as an avenue to an effective and efficient banking services. As far as the customers are concerned, the adoption of e-banking services will minimise cash robbery that has hitherto prevailed in the country as payments for goods and services can be sorted with alternate channels other than cash. Previous studies on the e-banking channels have suggested a correlation between the levels of adoption and perceived relative advantage. For instance, Tan and Teo, 2000 study showed that relative advantage influence the adoption of internet banking in Singapore. Oladokun and Igbinedion (2009), study showed a positive relationship between relative advantage and the attitude towards ATM adoption in Nigeria. Wang et al. (2012), study in Taiwan identified perceived relative advantage as a determinant to the patronage of "web ATM". Also, Asiegbu, Nwakanma and Etus, (2015) adopted the diffusion of innovation theory to explain the adoption rate of ATMs. Their findings showed that perceived relative advantage in addition to other innovation attributes put forward by Rogers affects ATM adoption in Imo state, Nigeria. This empirical evidence

suggests a positive relationship between perceived relative advantage of e-banking services by bank customers and the intention to adopt such innovation.

Compatibility - This has to do with the applicability of the innovation i.e. how compatible is the innovation with customers' existing ways of life and values Asiegbu, Nwakanma and Etus, (2015). As noted earlier, e-banking in Nigeria was equally facilitated by liberalization of telecommunication industry which had ushered to the country electronic communication devices such mobile phones and also the emergence of various internet service providers (Obe and Balogun 2007).

In addition, Nigeria was recorded a top 10 internet countries user in Africa has illustrated in table 4.5 below, the country has witnessed a significant increase in the penetration rate of the internet with 92.7million internet users (The statistical Portal, 2016). This is a major tool for e-banking services. Based on this, one would expect high level of all the e-banking platforms in Nigeria by individual bank customers. A study conducted by Olatokun and Igbinedion (2009) using Rogers' diffusion of innovation theory to investigate ATM adoption in Nigeria showed compatibility as a significant variable to the adoption of this platform. Also, the empirical study conducted by Olawepo and Akanbi (2013) on factors that influence the adoption of online banking indicated compatibility as a significant predictor of this e-banking platform among undergraduate students in Nigeria.

Figure 4.5: *Nigeria – The Top Internet User in Africa*

Top 10 African countries internet users

Country	Internet users in millions
NIGERIA	92.7
EGYPT	33.3
KENYA	31.99
SOUTH AFRICA	26.84
MOROCCO	20.21
UGANDA	11.92
ALGERIA	11
SUDAN	9.31
GHANA	7.96
TANZANIA	7.59
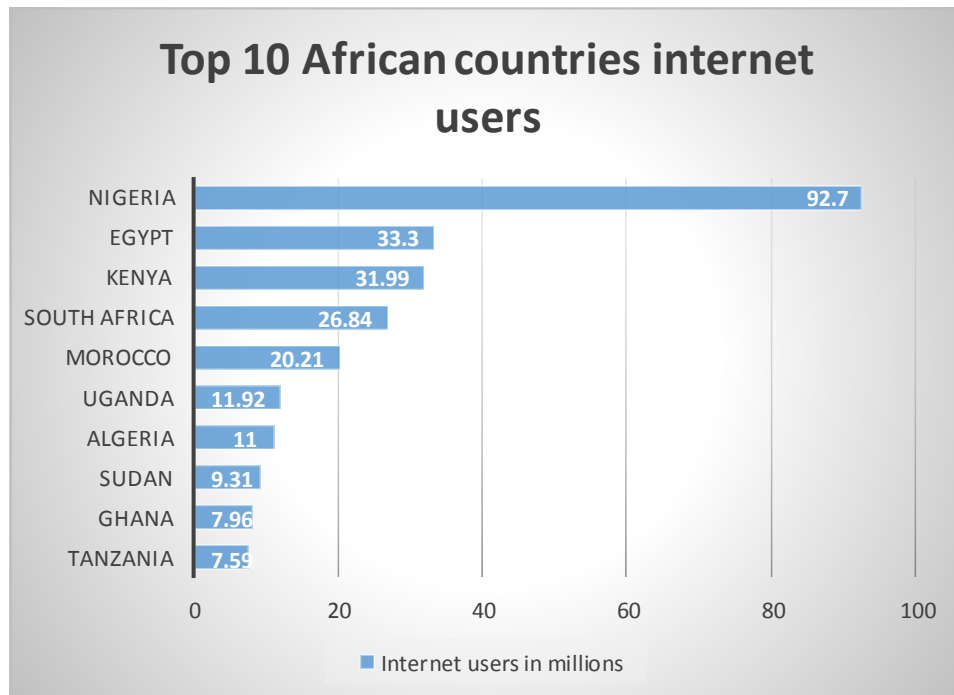
Source: The statistical Portal, 2016

Complexity - As far as Rogers is concerned, complicated innovation may not be easily adopted. This construct as argued by Chwelos, Benbasat, and Dexter (2001) significantly impacts on the intention to use an innovation. Generally, the operations of the e-banking services as opposed to the cumbersome old ledger cards and the manual filing system are very easy and fast (Ojeka and Ikpefan, 2011). This is therefore a fundamental reason why one would expect a higher level of adoption of e-banking (Chaffey et al., 2006; Maholtra and Singh, 2007; Pedro, 2012). In the Nigerian situation, the ATM is the most widely adopted component of the e-banking. This wide adoption could be attributed to the fact that the machine afforded both customers and banks some benefits for instance while banks have been able to handle more transactions per time than human tellers/cashiers, customers have been able to enjoy faster and efficient banking services (Dawodu and Osondu, 2013). This improvement in banking services facilitated an increase in the number of ATM installed by banks in Nigeria, as at 1998 only one bank had ATMs by the year 2004, 14 banks have adopted

this technology (Agboola, 2009). Previous study suggests that complexity influence the adoption of e-banking channel such as the mobile banking (Odumeru, 2013) and the ATM (Asiegbu, Nwakanma and Etus, 2015). Therefore, a greater adoption of e-banking platforms in Nigeria is expected.

Trialability - This has to do with how easily an innovation can be tried (Robins, (2009) & Asiegbu, Nwakanma and Etus, (2015). Users of e-banking services in Nigeria can subscribe and unsubscribe at any point in time. Thus, customers have the opportunity to experiment the services without getting "locked-in". This assertion could be justified by the fact that the high level of adoption of ATM by customers necessitated the continuous deployment of the machine by Nigerian banks. As at June 2013, 11,702 machines were reported to have been installed by Nigerian banks (Leadership Newspaper, 2014). Olatokun, and Igbinedion, (2009) & Odumeru (2012) studies found the perception of their respondents about trialability as relevant to the adoption of e-banking channel.

Observability – In a bid to eliminate ambiguity, this construct was redefined by Moore and Benbasat (1991) into two constructs: *result demonstrability* and *visibility*. For Rogers, a more visible innovation will influence its adoption. The innovators of e-banking services in Nigeria were more efficient compared to others, the availability of e-banking services such as ATM which provides fast cash withdrawals drew more customers to such banks (Siyanbola, 2013). In addition, banks made conscious efforts to advertise various e-banking services such as ATM, POS, debit cards, internet baking etc. via advertising platforms such as newspapers, media jingles, individual banks' websites, blogs, billboards, flies and word of mouths. Promotional offers were offered by some of the banks in Nigeria. Figure 4.6 below shows the GTBank promotional offer to encourage the use of POS. During this promotion period, customers who used their

GTBank Naira Mastercard to make at least five purchases on any POS terminal in Nigeria in a month were given cash back (Promo Nigeria, 2012 & KPMG, 2013). Similarly, United Bank for Africa (UBA) is another prominent Nigerian bank that encouraged the use of e-banking platforms by given out incentives such as iPad, and mobile phones to customers with the highest e-transactions during the period of the promotional offer. This offer includes all their e-banking platforms except the ATM (The Lion King-Blog edition, 2013). This therefore, indicated that other e-banking platforms are open to all customers. Figure 4.6 below shows some of the e-banking platforms promotional offers provided by some commercial banks in Nigeria.

Figure 4.6: *E-banking Advertisements and Promotional offers by Nigerian Banks*

In summary, although, all the five variables postulated by Rogers (1995) as determining factors to the adoption of any innovation such as e-banking reflect the behavioural intention for e-banking adoption in Nigeria, available studies such as Ayo (2010); CBN, (2011); Okechi and Kepeghom (2013), Yaqub et al., 2013, Siyanbola, 2013; found that the level of e-banking adoption is low despite the compatibility of the five factor perceived attributes that should diffuse innovation in the country as postulated by Rogers. This suggests that Rogers' DIT five perceived innovation attributes are inadequate in terms of providing a well-grounded understanding of the behavioural intention of e-banking adoption in Nigeria.

This study therefore, seeks a better understanding of customers' behavioural intention and adoption of e-banking in Nigeria by extending DIT construct (i.e. relative advantage; compatibility, complexity/simplicity, trialability and observability) with an additional "cost variable" owing to the fact that the relative advantage construct of the DIT has not adequately reflect the barriers that could be encountered in the adoption of an innovation such as e-banking by considering their cost implication for adoption by customers irrespective of other perceived benefits.

The cost variable for the purpose of the study will include the following factors; *cost of switching to e-banking; cost of appropriate complementary assets and usefulness of available services* (Howcroft et al. 2002; White and Nteli 2004; Ayo, 2006; Oni and Ayo, 2010). This is further discussed in section 4.11 below.

4.11   CONCEPTUALIZATION OF THE COST VARIABLES AND E-BANKING IN NIGERIA

According to the BusinessDictionary.com, cost refers to the amount given up to possess something. A wider perception of cost in the business world encompasses the monetary value, the effort, material, resources, time and utilities consumed, the risks incurred, as well as the alternate forgone. In this regard, cost variables as far as this study is concerned is defined by the researcher as:

> *"The associated commitments customers and potential customers of e-banking are mandated to make before they can fully adopt and utilise e-banking services to their optimum advantage".*

Apart from the fact that e-banking (as noted in section 4.6) is an innovation that requires certain complementary assets, the following cost variables have been identified by researcher as factors that may affect the level of e-banking adoption in Nigeria:

1. *The switching costs*: This is the defined as "onetime costs that customers associate with the process of switching from one provider to another" (Burnham et al., 2003 pg. 110). This can be conceived as the procedures customers and potential customers will undertake before switching from the traditional banking system to e-banking services. Burnham et al., 2003 classified the eight facets (*economic risk costs*; *evaluation costs*; *learning costs*; *setup costs*: *benefit loss costs; monetary loss cost; personal relationship loss costs and the brand relationship loss costs)* of switching cost into three different types of switching costs: *the procedural switching cost, the financial switching cost and the relational switching cost*.

    ➢ The procedural switching cost involves loss of time and efforts required to switching to an innovation (Blut et al, 2015). Usually it consists of *economic risk cost: (cost of accepting uncertainty which may encompass*

75

negative outcome), evaluation cost: (time and effort to scrutinize the decision to switch), learning cost: (time and effort to learn the use of new product), and setup cost: (time and effort needed to set the product running and get familiar with the service provider.

Procedural switching cost with regards to e-banking, can be regarded as process(es) an individual bank customer will go through to be able to adopt e-banking services such as the number of days required for the bank to activate e-banking services on customers' account; the level of customers' information/data that is required; the amount of knowledge required for a customer to utilize such services etc. Following Rogers's assertion, it is generally believed that the easier and quicker the switching process in this regard, the more customers' willingness to switch to such innovation.

➢ The financial switching cost has to do with the financial quantifiable resources i.e. the cost of benefit loss and the financial loss attached to adoption an innovation (Xie, Zhao and Yang, 2014). This in terms of e-banking is being considered in terms of the monetary implication to switch to e-banking channels, the amount of money a customer will have to give up to adopt such e-banking platforms for instance, the financial cost of applying for ATM/debit cards compared to the usage of withdrawal of payment slips.

➢ The relational switching cost which is the third type of Burnham et al' switching cost typology showcases the psychological and the emotional losses bank customers may experience when they switch from the old traditional banking system to the e-banking system. The face to face

customer service relationship peculiar to the old traditional banking system, the loss of individual identity/bond to a large extent will be reduced or even eliminated with e-banking services considering the fact that these channels are majorly self-service based.

Each of the three types of switching costs will be used as a yardstick to determine the perceptions of individual bank customers towards e-banking adoption in Nigeria.

2. *Available Complementary Assets to Individual Bank Customers:* This refers to the required electronic devices that a customer must have access to or possess in order to utilize e-banking in Nigeria. The significance of this variable lies in the fact that while banks have made significant efforts to make available e-banking products and services to individual bank customers in Nigeria, it is equally important for customers to have access to devices that will enable them to use these e-banking products and services effectively (Wang et al., 2012). Adepoju, Babalola and Onyeabor, (2011) & Ogunlowore and Oladele, (2014) indicated the need for these complementary assets to be made available and affordable in order to promote the adoption of e-banking platforms in Nigeria. In this perspective, the cost individual bank customer need to incur to adopt any of the e-banking platforms has been considered as an essential variable to be added to DIT model. Consideration will also be given to the availability and reliability of such devices in order to explore the current levels of e-banking adoption in Nigeria.

3. *Usefulness of Available Services:* Considering that Nigerian economy is still very much cash-oriented and a significant number of business transactions and payments are still manually done (Oluchi, 2015), it is therefore, important for

the individual bank customers to have a positive perception of the usefulness of available e-banking services in relation to their day to day transactions. Studies of scholars such as Ayo et al. (2010); Adesina and Ayo, (2010) suggested that the positive perception of the usefulness of the available e-banking services is crucial to the eventual adoption of these products and services in Nigeria.

These three factors (i.e. switching costs; available complementary assets and the usefulness of available services) have been regarded as crucial to defining the cost of adopting e-banking from the perspective of individual bank customers. It is based on these factors that the second part of this study proposes to investigate. Therefore, following the review of relevant literature in the previous sections, a conceptual framework for this study was developed (see Figure 4.7 below).

This conceptual framework shows the interrelationship between the first and the second part of the study. The first part of the framework identifies the key variables that will be used (using secondary sources of data) to explore and compare the starting points of e-banking in the UK and Nigeria as well as the impact of these starting points on the current levels of e-banking adoption in Nigeria. Furthermore, the second part of the framework shows the variables that were added to the Rogers' innovation attributes (referred to in this research study as cost variables) and also the perceived risks. Perceived risks will be examined from the perspectives of both the service users (individual bank customers) and the service providers (commercial banks in Nigeria). Primary sources of data will be used to investigate the implication of the second part of the study on e-banking adoption in Nigeria. In sum, both the first and second part of the framework are tailored to exploration of e-banking adoption in Nigeria.

Figure 4.7: *The Conceptual framework of the Research*
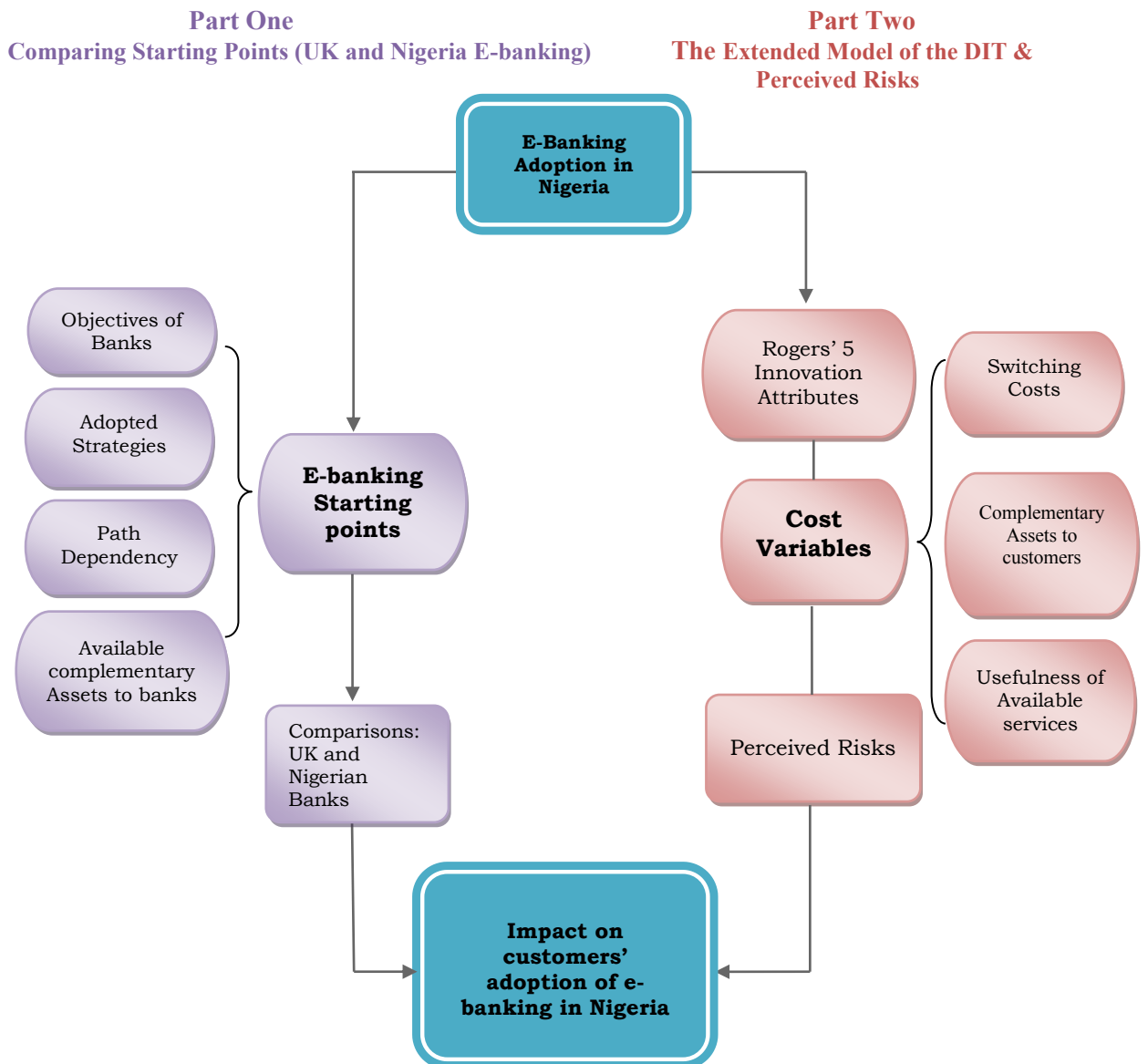
Source: *Author generated based on the analyses of Bank of England Quarterly bulletin, (BEQB) 1983; Rogers, (2003); Soludo (2006); Oluwagbemi et al. (2011); Yu, (2012); Dhurgham and Hariri (2012) and Siyanbola (2013).*

Having identified and established the importance of the cost variables as well as the perceived risks which are to be investigated in the second part of this study, the next section considers the research methodology.

CHAPTER FIVE
RESEARCH METHODOLOGY

5.0   INTRODUCTION

A research methodology, as argued by Krauss (2005), identifies practices adopted to attain the knowledge of a given social reality. As discussed in chapter three, the central aim of this study is to explore the adoption of e-banking channels in Nigeria. Therefore, the purpose of this chapter is to critically examine the practices that the researcher has adopted to carry out this study in a bid to proffer a justifiable and acceptable outcome to these research questions. To this effect, the philosophical approach to the research, the adopted methodological stance, the research instruments as well as the analytical tools which this study has adopted will be considered.

5.1   PHILOSOPHICAL APPROACH TO RESEARCH

Guba and Lincoln (1994); Mertens (2010) and Creswell, (2014) identified four research paradigms/philosophies/worldviews namely; positivism, constructivism, critical theory and realism. Each of which are characterized based on their methodology assumptions.

- ❖ *Positivism*: Positivism rests on the tenet that the knowable reality exists independent of the research process in which case, the social world, like in the natural science, is governed by rules that form patterns, as a result causal relationships among variables can be identified, proved and explained. As such, *observation* and *measurement* are key methods of this approach (Hesse-Biber and Leavy, 2006). The core philosophy of positivism as regards absolute truth of knowledge has been challenged by post-positivists: they argue that this claim will not be applicable to the study of human behaviour and actions. The post-positivists rather hold a deterministic approach to understanding cause and effects (Creswell, 2014). This implies that studies guided by the positivistic philosophical strand will only utilize methods that are quantitative (numeric) in

nature, thereby providing/generating observable and measurable data. Considering the key assumptions of this philosophical strand, the adoption of positivism will not entirely fit a study such as this, as this study tends to explore the perception of banking innovation i.e. e-banking. In addition, Wyse, (2011) regarded an exploratory research as such with qualitative approach; adopting qualitative methods to gain insight of underlying reasons, opinions and motivation so as to have a deeper understanding of the identified problem.

❖ *Constructivism*: This philosophical approach projects that individuals seek understanding of their environment and ascribe subjective meanings to their individual experience. According to Morgan (2014), the defining attribute of this paradigm rests on the assumption that everyone has peculiar experiences and beliefs and as a result, no reality exists outside those perceptions. This thereby, generates multiple views of constructed realities (Allison and Pomeroy, 2000; Sobh and Perry, 2006). This school of thought according to Morgan (2014), provides typical assumptions of a qualitative research. The propositions of this philosophical strand thus, fits the approach needed for this kind of research and may be adopted to gain understanding of the perception of individual bank customers as well as the e-banking officials in participatory banks regarding the adoption of e-banking platforms in Nigeria. However, the consideration of the perception of individual bank customers involved the incorporation of a large participants that are better captured using a form of quantitative approach such as the utilization of survey questionnaires. Therefore, owing to the large number of sample size needed to reasonably make conclusions on the perception of individual bank customers regarding e-banking adoption in Nigeria, this philosophical paradigm will not entirely fit this study.

❖ *Critical theory*: This perspective holds a transformational view of the existing social partners (Ager, 1991). It addresses specific issues of individuals or groups of individuals in a bid to seek a change. Merton (2010) noted that research studies in this direction are usually tied to politics and a political change agenda to challenge social oppression at the level in which it may occur. Therefore, the adoption of critical theory approach to a social research will not be applicable to this study as the aim of this study is not to change the behavior of people or the governing authority over e-banking adoption but to explore the factors that may predict further adoption of e-banking platforms in Nigeria.

❖ *Realism*: Realists believe that reality (real world) exists independently and is reality is external to the experience of any particular person. Therefore, the fundamental goal of a research that aligns with this school of thought is to understand the reality (Morgan, 2014). In this instance, the researcher seeks to understand the reality of the unifying system in which individuals operate interdependently (Sobh and Perry, 2006). This research philosophy is based on actions, situations and consequences as they embrace all applicable methods to a research problem (Creswell, 2014). From the foregoing, it can be deduced that the nature of reality (ontology) and the nature of knowledge (epistemology) of exploring e-banking acceptance has its stance in the *realist philosophical approach*. This is because the acceptance of e-banking in Nigeria is subject to individual perceptions and beliefs of bank customers in Nigeria. Therefore, the objective, one-way analytical observation and measurement approach of the positivist perspective will not be totally applicable in this instance. Given that the individual perception towards the acceptance of e-banking in Nigeria cannot be regarded inappropriate or condemned. Based on this fact, the multiple

methodological approach of the realist is considered most appropriate philosophical approach so as to understand the current level of e-banking acceptance and also to predict further adoption by individual bank customers in Nigeria. This approach will afford the researcher the opportunity to explore both the perception of individual bank customers (the service users) as well as the bank officials (the service providers) using the most applicable research methods.

The table 5.0 below shows the major defining characteristics of each of these research paradigms.

Table 5.0: *Major Characteristics of the four Research Paradigms*

Characteristics	Positivism	Constructivism	Critical Theory	Realism
Ontology	Social Reality is real and apprehensible.	Social realities are constructed. They are specific and are from various sources. They reflect the different experiences and beliefs of different people	Social realities are shaped by social, economic, ethnic, cultural political and gender values formed over time	Social realities are real but imperfect and probabilistic thus require many sources to arrive at acceptable findings
Epistemology	A one way objective research. Findings from verified hypotheses are established as laws or facts	Research findings are subjective and have to be interpreted based on individual account. The perception of truth is based on the unique perception of an individual	Subjective mediated findings that accounts for cultural or historical perspective	Objective but probable findings, non-falsified hypotheses are probable facts or laws
Methodology	Mainly quantitative such as survey, and experiments	Qualitative: In-depth unstructured interviews; focus group discussion; participant observation and grounded theory research	Action research and participant observation	Combination of suitable methods

Sources: Guba and Lincoln, (1994); Allision and Pomeroy, (2000) and Morgan, 2014.

The adoption of a realist approach to this study necessitates a discussion around the possible research methods within the realist school of thought/paradigm so as to justify the choice of research methods chosen for this research. The realist methodological approach is considered in sub-section 5.1.1 below.

5.2   *The Realist Methodological Approach*

As highlighted in table 5.0 above, the various philosophical paradigms actually place emphasis on certain methodological approaches, for instance the positivists/post positivists are the major advocates of quantitative research methods which involves numeric measures of observable independent facts (Healy and Perry, 2000) and these are usually gathered through research surveys and experimental research (Creswell, 2014) in an attempt to generate a value free analysis (Krauss, 2006). As stated earlier in section 5.1, an exploration of e-banking adoption will not fit properly to this method because the focus of the study is not to measure the number of customers that have adopted e-banking but an investigation of the perception of individual bank customers regarding the level of acceptance of this reality.

On the other hand, a qualitative research method is the methodological approach of the constructivists and the critical theorists as shown in table 5.1 above. Qualitative methods are subjective in nature; they examine and reflect on perceptions to gain understanding of social action and human activities (Collis and Hussey, 2003). Examples of qualitative methods include: narrative research method, grounded theory, phenomenological research, ethnography, and case studies.

Unlike the positivists/post positivists, the constructivists and the critical theorists, the realist applies a diverse approach to investigating a social reality. Therefore, the nature of this study is such that it necessitates a diverse methodological approach so as to fully capture the aim and objectives of the study and also proffer answers to the research questions outlined in chapter 3. Therefore, the adoption of the realist approach to this research will enable the adaptation of the following approaches demanded by this study towards this research:

- ❖ The utilization of secondary sources of data to examine the starting conditions for e-banking adoption in both the UK and Nigeria so as to draw relevant lessons.

- ❖ The examination of the perception of Nigerian banks (the e-banking service providers) about e-banking adoption by individual bank customers in Nigeria.

- ❖ The assessment of the perception of individual bank customers about e-banking services and adoption in Nigeria.

- ❖ The integration of both the perception of service providers of e-banking in Nigeria and the individual bank customers towards the adoption of e-banking services.

5.3 Mixed Research Methods

According to Creswell, (2013a pg.4) "mixed methods is a research approach, popular in the social, behavioral, and health sciences, in which researchers collect, analyse, and integrate both quantitative and qualitative data in a single study or in a sustained long-term program of inquiry to address their research questions". Brannen (2005), described mixed methods as the adoption of more than one research methods which may mean a mix of qualitative and quantitative research methods, a mix of a quantitative methods or a mix of a qualitative methods. Therefore, rather than using a single method such as; either a quantitative method or a qualitative method, the two methods can be integrated to fit into what is being investigated. This may also involve the use of different types of data. Barbour (2014) noted that this approach is often employed in an attempt to compensate for perceived shortcomings of individual methods (i.e. quantitative methods or qualitative methods) in which case, a researcher may adopt the combination of a particular type of quantitative methods such as survey questionnaire with in-depth interview; a form of qualitative method.

A mixed research method was also considered by the researcher as the most suitable approach for this research because it enables the researcher to cover both breadth and depth of the primary data of this study in terms of the following:

1. The collection of data from a large sample (approximately 950 in this case) of individual bank customers in Nigeria with the aid of a survey questionnaire. Scholars such as Mathers, Fox and Hunn (2009) considered the use of a survey questionnaire as appropriate for a large sample size. The perception of these customers regarding the Rogers' postulations of the five innovation attributes and the perception of bank customers about cost variables in the adoption of e-banking were explored through a questionnaire survey method.

2. The incorporation of data collection through in-depth interviews of key bank officials that deal with e-banking products and services. This qualitative method was used to cover the in-depth assessment of the perspectives of e-banking service provider (i.e. the commercial banks in Nigeria). Issues such as the rationale of banks for the adoption of e-banking, the available e-banking platforms and their level of patronage by customers, perceived risks by banks and their customers, cost implication for e-banking patronage by customers were explored.

5.3.1 Types of Mixed Research Methods

Creswell (2014), pointed out three types of method associated with the realist perspective. These are: convergent parallel mixed method; explanatory sequential mixed method; and exploratory sequential mixed method.

- ❖ *Convergent Parallel Mixed Methods:* These methods entail the collection of both qualitative and quantitative data alongside each other, each are then individually analyzed and the results are therefore merged for comparison before final conclusions are drawn. Terrell (2012), referred to this two-way data

collection phase as concurrent triangulation strategy as the primary aim of this mixed method approach is to give room for confirmation, corroboration or cross validation within a single study. In addition, Terrell noted that the interpretation of such data usually shows either a lack of convergence or convergence that supports knowledge claims. This method also allows the integration of data at the point of analysis (Terrell, 2012).

- ❖ *Explanatory Sequential Mixed Methods:* In this type of mixed methods, the researcher gathers and analyzes quantitative data, the result of this data then informs the collection of qualitative data. Thus, the researcher is then able to interpret how the qualitative data has explained the quantitative results. The key focus here is on the quantitative data because the aim is to have a more detailed explanation for the quantitative result (Terrell, 2012). Scholars such as Johnson, Onwuegbuzie and Turner (2007) referred to this method as quantitative dominant mixed methods research denoted as QUAN+qual research.

- ❖ *Exploratory Sequential Mixed Methods*: This is also known as qualitative dominant mixed method research often denoted as QUAL+quan research (Johnson, Onwuegbuzie and Turner, L. A., 2007). This method on the other hand, starts with qualitative data collection and analysis (Terrell, 2012). The findings from this first exercise are then used to form variables, instruments, or interventions upon which the next quantitative data gathering are based. The result from the quantitative data helps to interpret how the quantitative results provide new results, better instruments or better interventions Creswell, 2014).

This research has adopted Creswell's convergent parallel mixed methods to investigate the second part of this study which has to do with the adoption of e-banking by individual bank customers in Nigeria and the perceived risks. Unlike the other two

methods (i.e. the explanatory sequential mixed methods and the exploratory sequential mixed methods) whereby the result of the data initially obtained through a particular research method helps to inform or interpret the result of the other method, the convergent parallel mixed methods was utilized in this study because of the following factors:

1. The aim of this study is to carry out an independent and parallel investigation of e-banking adoption in Nigeria from two different perspectives i.e. e-banking service users (individual bank customers through the use of survey questionnaire) and the e-banking service providers (commercial banks in Nigeria through in-depth interviews)

2. As discussed in chapter 4 the convergent parallel mixed methods will also afford the researcher to minimize individual-blame bias in order to investigate "system-blame". This is because inhibitors of e-banking adoption in Nigeria will be explored also from the service providers' point of view.

3. Time compression is another key advantage of the convergent parallel mixed methods. The researcher was able to gather data from the two categories of respondents (the service users and the service provider) within the estimated time frame of three months. As such, quantitative data with the aid of a survey questionnaire were gathered alongside qualitative data through in-depth interviews.

Data from each approach were individually analyzed and the results that emerged were compared before final conclusions were drawn. Figure 5.0 below shows the diagrammatical representation of this integration in line with the perspective of Creswell (2013b).

Figure 5.0: *The Integration of the Convergent Parallel Mixed Methods Adopted By this Study*
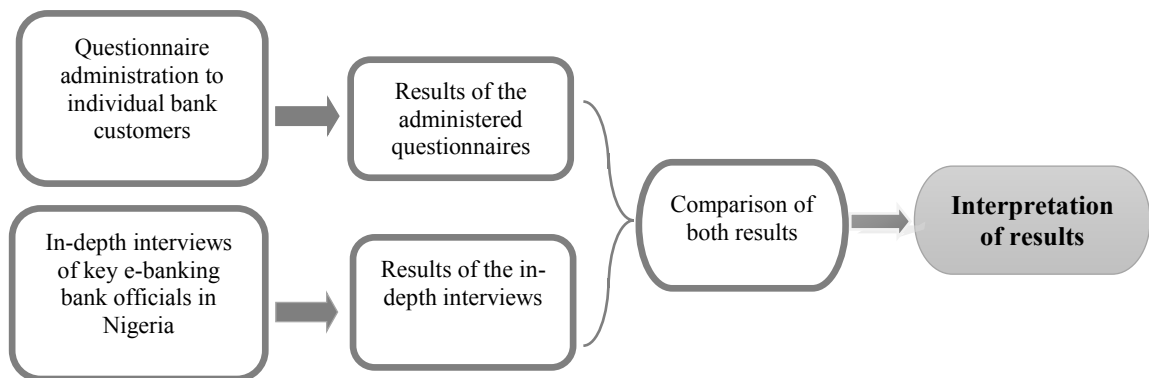
Source: Creswell, (2013b)

Essentially, this research has utilized three forms of data collection techniques. These are as follows:

1. Case study method: In chapter four, case study method was used for the first part of this study. Secondary sources of data were used to explore the starting conditions of e-banking specifically in the UK and in Nigeria. The starting points of e-banking adoption in these two countries were critically explored in terms of the following four factors: the objectives of banks, the strategies adopted by banks, path dependency and the available complementary assets (including ICT infrastructure). Relevant lessons have been highlighted and discussed in chapter four.

2. Survey questionnaires: These have been used to gather data from individual bank customers in Nigeria. This tool was chosen because bank customers are usually large in terms of number and a large sample size will be needed to justify or make substantial claim as a result of this factor, only a quantitative method (such as survey questionnaire) will be able to accommodate the large number of sample size that the study require. The survey questionnaire was carefully designed as questions focused directly on specific issues, it was brief and simply in line with the view of Alreck and Settle (1995) who identified focus, brevity and simplicity as the three important

attributes of an effective survey. The questionnaire comprises of the following sections tailored towards the actualization of the research aims and objectives:

a) In order to qualify as a competent respondent, those surveyed has to meet three key criteria:

    i. They must hold a Nigerian bank account

    ii. They must be in the age range 18-65 (deemed to be the most active bank account users).

    iii. They had to have awareness of at least one of the e-banking platforms under consideration.

The introductory part of the survey therefore filtered those deemed not suitable to complete the rest of the survey.

b) The other part of the questionnaire was divided into four sections. Section one focuses on the five innovation adoption attributes based on the Rogers' postulation i.e. relative advantage; compatibility; complexity; trialability and observability. This section was meant to examine the perception of each of these constructs by individual bank customers in Nigeria. A five-factor Likert scale which ranges from strongly disagree, disagree, no effect, agree and strongly agree was adopted for this part. A Likert scale is a rating scale that helps to measure attitudes or opinions (McLeod, 2008), thus, regarded as a suitable scale to measure individual perception of these variables. Moreover, this scale was regarded valid and reliable by Maiyaki and Mokhta (2012) based on a study conducted in a bid to explore the determinants of customers' behavioural responses in retail banking in Nigeria. The second section considered the perception of individual bank customers about the cost implication for the adoption of e-banking in Nigeria. A five factor Likert scale was also used to

measure this variable. The Third section examined available complementary assets to individual bank customers i.e. the electronic devices such as: mobile phones iPad, laptops, landline and desktop computers as well the access to the internet facilities which are needed to support the adoption of platforms following the findings of Okechi and Kepeghom (2013) and Yaqub et al. (2013) who found disparity in the usage of the available e-banking platforms in Nigeria. This section also examined the level of customers' patronage of e-banking platforms as available studies revealed that other e-banking channels except ATM are hardly patronized (CBN, 2013). The last section which is section four contained the demographic attributes of the respondents.

Appendix VIII shows the various construct in the questionnaires, the questions that measure each of these constructs and the rationale behind each of these questions.

3. In-depth interviews: This method was utilized to gather relevant data from key bank officials who deal with e-banking products and services in sample banks. Semi-structured interviews were conducted and the researcher was able to gather data regarding e-banking adoption from the service provider point of view. The interview questions were divided into the following five sections:

i.   The first section is based on the take up of e-banking by banks in Nigeria. It encompasses the time of take up by banks; the rationale for the adoption; the relationship between the take up of e-banking and the 2004 consolidation policy as well as the readiness of banks at the start of e-banking services. This is to examine the rationale behind the provision of e-banking services by banks at the start of these products and services.

ii.   The second section of the interview questions has to do with the e-banking platforms/channels that are provided by the banks and level of patronage of

these platforms by individual customers. This has been incorporated in order to assess the types of e-banking services provided by the commercial banks in Nigeria and the level at which individual customers patronize these services.

iii.   The third section, considered the perceived risks by banks and the individual bank customers regarding the adoption of e-banking platforms. This has been considered vital as the perception of customers about the safety and security of e-banking platforms may influence adoption rate of these platforms.

iv.   Section four of the interview questions examined the perception of the cost implication for the adoption of e-banking services for individual bank customers in Nigeria.

v.   The last section is based on the demographic profile of the interviewee. This was included so as to ensure that the interviewee has the expertise required to enable participation in this research. The fundamental criterion is that the interviewee must be a bank official that deals with e-banking products and services.

Appendix IX shows the interview questions and the rationale for each of the questions.

5.3.2   EXPERT WITNESS FEEDBACK ON KEY RESEARCH FINDINGS

An expert witness, unlike an ordinary "lay" witness, provides an independent opinion on issues presented to them. Their views enhance the conclusions that are drawn from the given facts (O'Melia, 1991). The high level of expertise and their objectivity are some of the defining characteristics of an expert witness. Although, the testimonies of expert witnesses are much utilized in the legal field, the opinion of an expert witness was consulted on the findings of this research as a way of strengthening the results of this study. Considering that a significant number of commercial banks in Nigeria adopted e-banking after the introduction of the consolidation policy in 2004; about 13

years ago (see section 4.4), an expert witness with about 8 – 10years of e-banking experience in Nigeria was considered suitable for this role. This is because increased deployment of e-banking channels became more pronounced after the implementation of the consolidation policy (Adepoju and Alhassan, 2010).

It is important to note that the various data collection process as well as the procedure to obtain expert witness feedback were all carried out in line with the Robert Gordon University's research ethics policy. The ethics for this research are considered in the next section.

5.4   RESEARCH ETHICS

Resnik (2015), described ethics as the norms for conduct that differentiates acceptable and unacceptable behaviour where research is concerned. The integrity of a given research is directly related to the proper consideration of ethical issues that are involved (Bryman, 2016). Therefore, the importance of ethics in research cannot be overemphasized. As far back as 1978, Diener and Crandall summarized research ethics under four major principles which should be put into consideration when conducting social science research. These are as follows: No harm to participants; informed consent; no invasion of privacy and no deception.

Apart from these general principles, this research process was carried out in line with the stipulated guidelines of the university. The research ethics form (i.e. Research Ethics: Research Student and Supervisor Assessment (RESSA) - see appendix V) is a self-assessment form that is aimed at promoting good ethical practice in the conduct of academic research. At the beginning of this study, this form was duly filled by the researcher and the principal supervisor and it was submitted to the research degree office for assessment.   In sum, it can be concluded that this research study has adhered to the ethical principles relating to this form of study (Davies and Hughes, 2014).

5.5   DATA COLLECTION TECHNIQUES

Data for the first part of this study which is a comparative analysis of the starting points of e-banking the UK and Nigeria and were gathered from various banks' bulletins, financial reports, various financial institutions websites, textbooks and relevant articles and journals. These are the major secondary sources of data collection techniques identified by Skinner, (2012). A pilot study was conducted followed by the face-to face survey questionnaire administration to individual bank customers and the in-depth interviews of e-banking officials.

5.5.1   Pilot study for this research

Prior to the collection of the primary data needed for this study, the researcher carried out a pilot study. Pilot studies, according to Polit et al., (2001, pg. 467), are "small scale version(s), or trial run(s), done in preparation for the major study". Baker (1994) noted that the idea of a pilot study is to allow a pre-testing or 'trying out' of a particular research instrument. The whole essence of this exercise as argued by Davies and Hughes (2014) is to give the researcher the confidence that all preparatory work toward the study has paid off and adequate research instruments have been developed for the study. This is because the outcome of a pilot study helps to fine tune a better research instrument. For instance, feedback from a pilot study could point out ambiguous questions or questions that could easily be misconceived.

A pilot study can be carried out with both quantitative and qualitative research methods. Apart from boosting the confidence of the researcher regarding the validity of the instruments adopted for a study, Teijlingen and Hundley (2001) identified the advantages of pilot study such as: evaluation of the feasibility of the study/survey; assessment of whether the research protocol is realistic and workable; evaluation of the effectiveness of the sampling frame and technique; identification of any logistical

problem which might occur using proposed methods; determination of whether the proposed methods or instruments are inappropriate or too complicated etc.

This research has benefited from the advantages associated with the conduct of a pilot study prior to the main field work. The researcher conducted pilot studies with a small sample of the target population. A few copies of the questionnaires, initially developed for this study, were distributed to individual bank customers in Nigeria. In addition, a bank official in Nigeria that deals with e-banking products and services was contacted and interviewed for the pilot study.

5.5.2 Impact of the pilot study on this research

Based on the result obtained from the pilot study exercise, the following changes in the research instruments were effected:

The Questionnaire:

1. The meaning of some of e-banking platforms such as: internet/online banking; Point of Sale (POS) and mobile banking) had to be defined in more detail as a significant number of respondents were unable to identify the differences associated with these e-banking platforms.

2. Two introductory questions (see appendix III) had to be included in the questionnaire as a yardstick to taking part in the survey. This was to ensure that those who were given questionnaires to complete are individuals who operate a personal bank account in any of the existing commercial banks in Nigeria.

3. In the section 3 of the questionnaire; questions regarding the reasons for level of patronage of each of the e-banking platforms had to be included so as to better capture the rationale for that question.

4. Finally, in section 3, a question regarding the channel used for the highest level of banking transaction ever made had to be incorporated as this was deemed

vital following the pilot study. This is to showcase the level of patronage of e-banking channels by individual bank customers thereby revealing their preference and perception of their choice of e-banking platform.

The semi-structured in-depth interview

1. The average length of time needed for the interview was included in the introductory page of interview questions. As the pilot interviewee needed to know this before an interview could be scheduled.

2. Also, the definition of e-banking platforms (ATM, internet/online banking; Point of Sale (POS), Telephone banking and mobile banking) as conceived by the study had to be clarified as feedback from the pilot study showed that there were misconceptions about these platforms.

3. Questions on perceived risks had to be included as this was pinpointed by the pilot interviewee.

These changes resulted in a more robust research instruments that were finally used for this study. Section 5.6 below covers the sampling technique and the sample size used for this study.

5.6   SAMPLING TECHNIQUE

According to Yates (2004) and Walliman (2016) sampling techniques are methods used to select cases or respondents for a study. It helps to manage various factors that may influence survey researches. It also ensures that the findings from a study are representative enough to enable generalization.

5.6.1 Types of Sampling Techniques

According to Sekaran and Bougie, (2013) and Davies and Hughes (2014) sampling techniques are grouped into two broad categories and these are: probability sampling and non-probability sampling.

Probability Sampling

Black (2000), referred to this type of sampling as randomization as they are employed to obtain a sample that is considered representative of the whole population. Types of sampling techniques include: *Simple random sampling: Stratified random sampling and Cluster sampling.*

Non-Probability Sampling

This is also known as non-random sampling as they provide less justifiably representative samples and sometimes used to minimize the cost of probability sampling or perhaps when it is difficult to obtain the entire list of a given population (Black, 2000). These types of sampling techniques include: *Convenience sampling: Quota sampling and Purposive sampling.*

This study has adopted a mix of quota and purposive sampling technique because of the following factors:

❖ There were 21 commercial banks operating in Nigeria as at the time this study commenced. Therefore, from this population, a total number of 1,050 questionnaires (50 questionnaires for each of the banks) as proposed to be distributed to individual bank customers of all these commercial banks.

❖ The selection of the key bank officials that deal with e-banking products and services was based on the classification of these banks by the CBN report (2013). CBN classified all the commercial banks into three tiers: Tier 1 international, Tier 2 National and Tier 3 Regional. In line with this categorization, the researcher was able to interview relevant bank officials of each of these categories. This has as a result, ensured that each of the sub-categories of the entire population were represented.

❖ The selection of key bank officials that deal with e-banking products and services of participatory banks and also to select individual bank account holders. Although, the selection of the individual bank account holders that participated in the study were more opportunistic in nature as any individual bank customer within the specified age category had the chance to take part in the survey, the use of a purposive sampling technique guided the selection of the appropriate sample size needed for the study.

The first two factors showcase fitness of quota sampling technique while the third factor reflects the purposive sampling technique. In sum, the researcher has adopted mixed sampling techniques as suggested by Black, (2000). These mixed sampling techniques are demonstrated in figure 5.1 below.

Figure 5.1: *The Mixed Sampling Techniques Adopted in this Study*
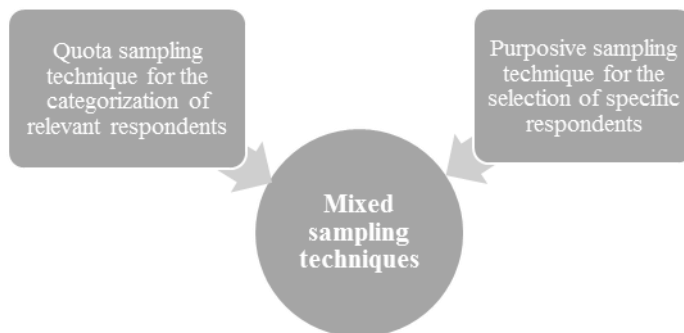
Source: author generated

5.7   SAMPLE SIZE

Sample size is the subset of sampling units from a population (Frankfort-Nachmias and Nachmias, 2008). The sample size of this study were drawn from officials of commercial banks in Nigeria that deal with e-banking products and services and the individual bank customers.

1. E-banking bank officials: In-depth interviews with bank officials that deal with e-banking products and services were carried out alongside survey questionnaire

administration. These bank officials were selected from each of the three categories of commercial banks existing in Nigeria based on the CBN (2013) classification.

A total of 7 banks were categorised under Tier 1 - international banks, 12 banks were grouped under Tier 2 - national banks while 2 commercial banks were grouped under Tier 3 – Regional. This makes a total of 21 licenced commercial banks operating in the country. Table 5.1 below shows the names of banks under each of these various categories.

Table 5.1: *Structure of Commercial Bank in Nigeria (2013) – 21 banks*

Tier 1 (International Banks)	Tier 2 (National Banks)	Tier 3 (Regional Banks)
Ecobank Nigeria Plc.	Access Bank Plc.	Heritage Banking Company Ltd
First Bank of Nigeria Plc.	Citibank Nigeria Limited	Wema Bank Plc.
First City Monument Bank Plc.	Diamond Bank Plc.	
Guaranty Trust Bank Plc.	Enterprise Bank	
United Bank For Africa Plc.	Fidelity Bank Plc.	
Union Bank of Nigeria Plc.	Keystone Bank	
Zenith Bank Plc.	MainStreet Bank	
	Skye Bank Plc.	
	Stanbic IBTC Bank Ltd	
	Standard Chartered Bank Nigeria Ltd	
	Sterling Bank Plc.	
	Unity Bank Plc.	

Source: *CBN, 2013*

However, in the later part of 2015, two commercial banks were bought by two other banks *(Skye Bank Nigeria Plc. bought Mainstreet Bank and Heritage Bank Company Ltd absorbed Enterprise Bank)*. This reduced the existing commercial banks in Nigeria as at October 2015 to 19 banks (see table 5.3 below). In addition, one of the banks that was initially classified by the CBN in 2013 as a tier 3 (regional bank) became a tier 2 (national bank) as a result of her acquisition of a tier 2 bank. Based on these changes, though the total number of banks in tier 1 remained 7, the number of tier 2 banks

reduced to 11 banks while tier 3 reduced to 1 as opposed to initial number of 2 banks in this category. Table 5.2 below shows the changes in the categories of the commercial banks in Nigeria. These are total number of commercial banks operating in the country as at the time the data for this study was obtained.

Table 5.2: *Updated Structure of Commercial Bank in Nigeria (2015) – 19 banks*

Tier 1 (International Banks)	Tier 2 (National Banks)	Tier 3 (Regional Banks)
Ecobank Nigeria Plc.	Access Bank Plc.	Wema Bank Plc.
First Bank of Nigeria Plc.	Citibank Nigeria Limited	
First City Monument Bank Plc.	Diamond Bank Plc.	
Guaranty Trust Bank Plc.	Heritage Banking Company Ltd	
United Bank For Africa Plc.	Fidelity Bank Plc.	
Union Bank of Nigeria Plc.	Keystone Bank	
Zenith Bank Plc.	Skye Bank Plc.	
	Stanbic IBTC Bank Ltd	
	Standard Chartered Bank Nigeria Ltd	
	Sterling Bank Plc.	
	Unity Bank Plc.	

Source: AMCON, 2015

Considering this new bank categorization ratio of 7:11:1 which now make up the total number of licenced commercial banks in Nigeria, the researcher was able to interview **3** e-banking officials in three different banks amongst those grouped under tier 1 (international banks). In addition, **4** e-banking officials from four different banks categorized as tier 2 (national banks) were interviewed and finally **1** e-banking official from the only commercial banks that now operates as a regional bank in Nigeria was interviewed. It is important to note that the banks used for this research were those that agreed to take part in this research. Thus, the representation of the sample size ratio of the interview respondents is **3:4:1** as demonstrated in Figure 5.2 below.

Figure 5.2: *Sample Size*
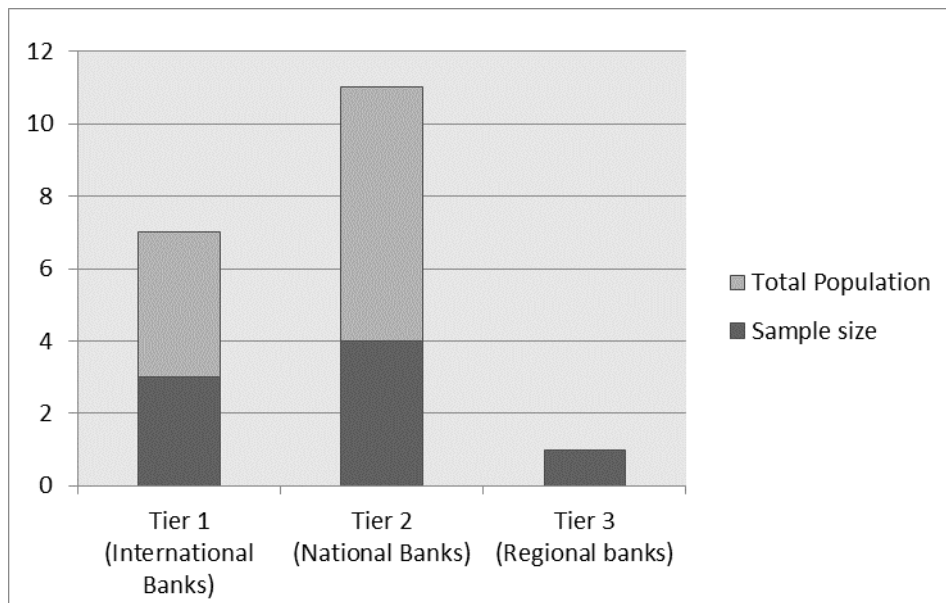
Source: Author generated

Tier 1 banks have a common characteristic of being among the leading and innovative Nigerian banks in terms of e-banking adoption (KPMG, 2013). The participation of three banks in this category enhanced an in-depth assessment as e-banking adoption, products and services can be examined from the perspective of these leading financial institutions. It is also significant to note that the 4 banks that participated in this research under tier 2 (national banks) encompassed banks whose origin transcends beyond the shore of the country and also included banks that are relatively new in the industry. This diversity has equally enhanced the robust nature of the data obtained irrespective of the percentage of the accessible sample size when compared to the population of this tier. The fact that the only regional bank participated in this research justified the fair representation of the different categories of the commercial banks operating in the country. Table 5.3 below shows the coded list of banks that participated in this study as well as the level of e-banking experience of these officials. The names of the banks have been coded for ethical reasons.

Table 5.3: List of Participatory Banks and the level of expertise of the participants

S/N	Bank category	Identification Code	E-Banking Experience of the Interviewee (years)
	Tier1 (International Banks)		
1		EBO - 01	8
2		EBO - 03	3
3		EBO - 06	9
	Tier2 (National Banks)		
4		EBO - 07	7
5		EBO - 02	2+3months
6		EBO - 05	9
7		EBO - 04	2
	Tier3 (Regional Bank)		
8		EBO - 08	13

Source: Author generated

The Interview Procedure: A letter of introduction obtained from my principal supervisor was sent out to e-banking officials in commercial banks in Nigeria soliciting their participation in this research. This was followed up by personal telephone calls to get their approval and to schedule a convenient time of interview. Banks listed in table 5.3 above were those that responded and eventually took part in the research. Prior to the interview, these e-banking officials were briefed about the kind of questions to expect and these actually helped them prepare towards the interview. All participants were willing to take more questions or provide more clarification, should the need arise, even after the interview. This gave the researcher the opportunity to contact some of the interviewees to obtain more insights into issues relating to the effort of their bank to deal with perceived risks of e-banking product and services.

The Survey Questionnaire Design: The survey questionnaires were carefully designed in a bid to help achieve the aim and objectives of the study and also to enhance

provisions of appropriate answers to the research questions outlined in chapter three (see Appendix VIII). Respondents chosen for this study were within the age category of 18yrs and 65yrs.

The minimum age category of 18years was selected because it is the legal age requirement in which an individual can be allowed to have a personal bank account without the consent of parents or guardian. Customers above the age category of 65yrs are usually regarded as dependent and less active segment of the population (World Bank, 2014). Moreover, 60 years is the statutory retirement age in the public service or 35years of active service (Ali, 2014). Although, Ali noted that the Retirement Age Harmonization Act of Nigeria, 2012 amended the retirement age of judicial officers in Nigeria to 70years and 65years for academic staff in tertiary institutions while private sector retirement age in the country is basically put at 60years, the average retirement age in Nigeria is 60years. Considering this fact, respondents above the age of 65years (the maximum age bracket for participant of this study) may not be directly involved with the usage of e-banking services.

Bearing in mind that return rate of questionnaires is usually lower than the amount distributed (Sathye, 1999), a proposed number of 1,050 questionnaires were expected to be administered so as to create an avenue for a reasonable amount for the final analysis. Moreover, Alreck and Settle (1995) noted that for a sample size to obtain adequate confidence, most experienced researchers would consider a sample size between 200 and 1, 000 respondents for populations more than 10,000. Based on these two factors (i.e. the possibility of lower return rate and the need to boost the sample size confidence), 50 respondents were expected to participate from each of the 21 licensed commercial banks operating in Nigeria. This large sample size was projected so as to

ensure that a substantial amount of the proposed sample size is eventually obtained and also to accommodate all the 21 licenced commercial banks operating in the country. However, following the recent changes in the Nigerian banking sector that led to the reduction of the number of commercial banks in Nigeria to 19, the initial plan of administering 1,050 questionnaires was reduced to 950 (i.e. 50 questionnaires X 19 banks). It is important to note that, this research focus is not on "unbanked" but on bank customers who have adopted or yet to adopt e-banking services provided by their various commercial banks.

5.8   MEASUREMENT AND SCALE

Bryman, (2012) and Pallant, (2013) pointed out why researchers should be well informed of how quantitative data gathered will be analysed prior to data collection: the chosen data analysis technique must match certain variables which the researcher intends to analyse, in other words, certain data analysis techniques are variable specific. For instance, data intended to be analysed with multiple regression method should not be gathered using a ordinal scale as this will not fit such statistical analysis because the one of the basic assumptions of this statistical tool would have been violated (see section 5.14) therefore, resulting in erroneous output (Bryman and Creamer, 2004). Therefore, Bryman and Creamer considered the need to distinguish between the four types of the levels of measurement as fundamental to quantitative analysis. The four different types are: nominal, ordinal, interval and ratio (Smith, 2015).

  i. *Nominal Scale:* This is also known as categorical variables, variables in this category have the most basic level of measurement (Walliman, 2016) as number are only assigned as a way to identify or categorize the data, difference in the number assigned to each group or class has no mathematical significance (Bryman and Creamer, 2004). E.g. yellow colour assigned number 1 and blue,

assigned 2. As far as this research study is concerned, the measurement of both the dependent and the independent variables were not arbitrary (see detail discussion in chapter 7). This is because the intention of the researcher is to measure the perception of the respondents about the various constructs in the extended model as well as the relationship between levels of adoption of the e-banking platforms.

ii. *Ordinal Scale:* These are often referred to as ranked scale. The measurement of this kind of variable according to Calder (1996), indicates the ranked order of a data but shows no indication of the distance between the data. E.g. measuring a variable in an order of perceived importance such as; the 5-point Likert scale of strongly disagree; disagree; indifferent; agree and strongly agree.

iii. *Interval Scale:* In this kind of measurement, data are assigned numerical values with equal interval and as such, the true value of its zero point if included is unknown (Black, 2000 and Walliman, 2016). For Frankfort-Nachmias and Nachmias, (2008), a measurement will be classified as interval if after being ranked the actual distance between each observation is known and the distance is constant amongst the observed variables. E.g. Temperature measurement.

iv. *Ratio Scale:* Unlike the nominal and the interval scale where the zero value is arbitrary, as there are occasions where the measurement can be equal to true zero value (Davies and Hughes, 2014). Example of such measurement include; time, weight, distance etc.

Considering the nature of this study, an ordinal scale was adopted. The independent variables were measured with a ranked 5-point Likert scale that ranges from strongly disagree, disagree, indifferent, agree and strongly agree. The dependent variables were also measured using another 5-point Likert scale (i.e. never, hardly,

sometimes, often and very often). This enabled the levels of adoption of e-banking platforms to be investigated using appropriate statistical analysis. Although, scholars such as McNabb, (2002) pointed out that variables measured on Likert scale are sometimes treated as interval based on the claim that the number assigned is used to rank the cases but not the actual measurement thereby enabling such data to be analysed using interval statistical analytical tools (Garson, 2012) however Judd, Smith and Kidder (1991) argued that Likert scale is for ordinal variables and should not be analysed with interval statistical technique because of the difficulty of assessing whether the difference between a respondent's perception about the difference between 'strongly agree' and 'agree' is the same as the difference between 'agree' and 'indifferent' (Bertram, 2009).

5.9   THE QUESTIONNAIRE ADMINISTRATION PROCESS

Three research assistants were recruited to help with the face to face questionnaire administration. This was considered necessary due to the large number of respondents involved and also to be able to speed up the data collection process to comply with the allotted time frame of three months. These research assistants were people that had acquired skills and competencies in this job role as they had successfully handled a number of paid research projects prior to this study. In addition, they are well known individuals who have previously worked with the researcher on a research project. Despite the assurance of their level of expertise, the researcher ensured that the following checks were put in place to enhance the quality of data obtained:

1. An initial meeting with the three research assistants was carried out by the researcher. This first meeting was basically conducted to explain the essence of the research; the various aspects of the survey questionnaire; the role of these

research assistants; and also to discuss effective means of reaching the survey respondents.

2. The researcher carried out regular update meetings where the progress of the data collection phase was discussed and the challenges also addressed.

3. Research assistants were mandated to give necessary support to help respondents to fill the questionnaires correctly. They were also required to double-check that all relevant sections of the questionnaires had been correctly filled.

4. Completed questionnaires distributed by the research assistants were submitted to the researcher at the end of each week of the data collection period. As a result, the researcher was able to double-check that the questionnaires had been fully completed and proportionately distributed to individual bank customers of all the existing commercial banks in Nigeria.

Furthermore, each questionnaire contained a cover letter which described briefly the nature and the purpose of the study so as to seek approval for participation from the respondents. A pen was given to each participant as an incentive after they completed the questionnaire. This was a token gift to appreciate their voluntary participation, it was considered too small to manipulate or influence their responses. Moreover, this was only handed over to them upon the completion of the questionnaire

5.9.1. Questionnaire Return Rate

The return rate is regarded as the percentage of the total number of questionnaires that were successfully filled and completed (Alreck and Settle 1995; Davies and Hughes, 2014). As noted earlier, this rate determines the amount of confidence that could be credited to the findings of a research. As far as this study is concerned, out of the total number of 950 questionnaires administered, 688 copies were completed and returned.

The remaining 264 questionnaires were not returned by the respondents within the expected timeframe. 2 copies out of these 688 questionnaires were discarded because they were not properly filled and as a result, they were not included in the analysis. (See Table 5.4 below)

Therefore, a total of 686 questionnaires were eventually used for analysis and this yielded a 72.2% return rate in terms of the proposed number (Rada, 2005) of 950 participants. Response rate at this level is regarded by Sathye (1999), as above the acceptable response rate standard in the social sciences. Worthy of note is the fact that the response rate recorded for this study is relatively higher than what previous studies in this direction have obtained. For instance, using Rogers' Diffusion of innovation theory to study the adoption of ATM in Nigeria, Oladokun and Igbinedion in 2009, recorded 71.3%; Odumeru who carried out a study in 2012 on e-banking acceptance in Nigeria had about 62% response rate; Bojuwon (2015), in his study on exploring the difficulties in internet banking in Nigeria recorded a 60.8% response rate. Olawepo and Akanbi (2015) recorded a much higher response rate of about 87% in their study on factors influencing internet banking adoption among undergraduate students in Oyo town, Nigeria, had their sample size restricted to students of a particular university where greater and easy access to a large number of respondents is expected as such this could have contributed significantly to the large response rate obtained unlike when respondents were taken from a whole state, region or the entire nation.

As far as this study is concerned, this high response rate can be attributed to the following reasons:

1. *The Approach Adopted* - The face to face questionnaire administration process adopted had a positive effect on the high return rate as respondents had

opportunity to ask questions and clarify issues about the questionnaire and the study as a whole.

2. *The presentation of the questionnaire* – Each questionnaire had an introductory letter attached to it (see appendix III). This letter clearly defined the purpose of the study, indicated where the study is being conducted, the name of the researcher, indicated the estimated time required to complete each questionnaire and also assured confidentiality. This allayed the fear of the respondent and increased the willingness to be part of the study.

3. *The structure of the questionnaire* - Instructions on how to complete each of the questions were clearly stated in each of the sections. This made the completion of the questionnaire less cumbersome.

4. *Flexible completion time* - Although, 15 minutes was estimated and noted as the time required to complete the questionnaire, respondents that needed more time were allowed to complete the questionnaire at their own pace.

5. *The nature of the research* – E-banking is gaining wider coverage in Nigeria, the effect of adoption and non-adoption of these platforms on an average Nigerian is becoming pronounced on a daily basis, considering the CBN regulations regarding the use of these channels. Thus, a research in this direction facilitated increase in participation. Table 5.4 below shows the breakdown of the return rate of the questionnaire.

Table 5.4: *Questionnaire Return Rate*

S/N	Bank	Copies Administered	Copies Returned	Copies Discarded	Valid Copies Analysed
1	Eco Bank Nigeria Plc.	50	39	0	39
2	First Bank of Nigeria Plc.	50	44	0	44
3	First City Monument Bank Plc.	50	34	0	34
4	Guaranty Trust Bank Plc.	50	46	1	45
5	United Bank For Africa Plc.	50	38	0	38
6	Union Bank of Nigeria Plc.	50	42	0	42
7	Zenith Bank Plc.	50	32	0	32
8	Access Bank Plc.	50	37	0	37
9	Citibank Nigeria Limited	50	31	0	31
10	Diamond Bank Plc.	50	39	0	39
11	Heritage Banking Company Ltd	50	28	0	28
12	Fidelity Bank Plc.	50	38	0	38
13	Keystone Bank	50	30	0	30
14	Skye Bank Plc.	50	43	0	43
15	Stanbic IBTC Bank Ltd.	50	35	0	35
16	Standard Chartered Bank Nigeria Ltd	50	36	0	36
17	Sterling Bank Plc.	50	37	0	37
18	Unity Bank Plc.	50	31	1	30
19	Wema Bank Plc.	50	28	0	28
	Total	**950**	**688**	**2**	**686**

Source: Author generated

5.10   SUMMARY OF THE DATA COLLECTION TECHNIQUES

This study has adopted a mixed method approach in order to proffer answers to the research questions outlined in chapter three. The various data collection techniques adopted captured specific area of this study and addresses certain aims and objectives of this research. Table 5.5 below shows the summary of the different data collection techniques and the particular study area it was used to address.

Table 5.5: Summary of the focus of the data collection instruments adopted

S/N	Data collection Technique	Area captured in the aims and objectives
1	*Case study*	This has been used to: Explore the starting conditions of e-banking in the UK and Nigeria The examination of the availability of complementary assets, in both countries that are required to support e-banking
2	*The In-depth Interview*	This has been used to: Examine issues relating to e-banking service providers (commercial banks) i.e. banks readiness to e-banking take up, e-banking services provided, perception about levels of adoption and the perceived risks associated to e-banking services.
3	*The Survey Questionnaire*	This has been used to: Evaluate the significance of the extended model of the DIT on e-banking adoption by individual banks customers

Source: Author generated

5.11   DATA ANALYSIS

Bryman (2016) describes data analysis as the application of statistical procedures to the data that have been gathered which can either be primary or secondary data. There are two types of statistical data analysis. These are: descriptive statistical analysis and inferential analysis (Trochim, 2006 and Babbie, 2010).

1. *Descriptive statistics*: This according to Vergara et al (2009 pg. 4456) is a branch of statistics "useful for collecting, grouping and analysing a known set of data, called population, by assigning a proper descriptive model or distribution family to it" This form of statistics basically describes or summarizes the main features of sample such as the frequencies, percentages averages etc., they are not based on any form of probability theory (Davies and Hughes, 2014). Argyrous (1997, pg. 15) conceived descriptive statistics as "the numerical and graphical techniques for organizing, presenting and analysing data". This study has utilized this form of analysis to describe the characteristic of the sample size such as the demographic attributes of the research participants.

2. *Inferential statistics*: This is also known as inductive statistics (Vergara et al, 2009). This approach is usually adopted when the intention is to make judgement or draw conclusions from the data obtained or observations from a given sample (Babbie, 2010). In which case hypotheses and models are tested (Trochim, 2006). This study moved beyond merely describing the characteristics of the sample size but also adopted inferential statistics to explore relationships between e-banking adoption in Nigeria and the extended model of Rogers. This was carried out with using thematic content analysis with the aid of NVivo: a Computer–Assisted Qualitative Data Analysis (CAQDA) software package in order to extract meaning from rich, narrative and visual data (Braun and Clarke, 2006) obtained for this study and also the utilization of the Statistical Package for the Social Sciences software (SPSS Version 21) to draw conclusion based on the statistical analysis of the quantitative data.

5.12 PROCESSES TOWARDS DATA ANALYSIS

As indicated in sub-section 5.2.4, this study adopted convergent parallel mixed methods which have to do with the parallel utilization of both quantitative and qualitative research methods. The processes of analysing data obtained for each of these methods are discussed as follows:

5.12.1 Qualitative Data: Processes of Analysis

According to Creswell (2013b), qualitative data analysis entails the preparation and the organization of data for analysis. The key steps involved: transcription, coding; and analysis are outlined below.

1. ***Data Transcription:*** Transcribing the data is the first step that the researcher took towards analysing the obtained qualitative data. Although, Gibbs, (2007) noted, it is not a fundamental requirement that all data obtained from the field

must be transcribed to have them analysed as some researchers support direct analysis from the tape or video recordings. Often times a lot of qualitative researchers transcribe their interview recordings, field notes and observations to well-ordered typed copy. Considering that this study utilized CAQDA, the researcher considered it imperative to have a full transcription of the recorded interviews as such carried out in conversation analysis[6]. This was done basically to address the criticisms scholars such as Fielding and Lee (1998) have against CAQDA. They argue that CAQDA creates a gap between the researcher and the data as there exists a feeling of being distant form the data unlike a paper analysis. Thus, the full transcription (word for word) of each of the recorded interviews enables the researcher to familiarize themselves with the data. In addition, a Microsoft word document to be imported in the NVivo 10 needed to be produced to proceed with the main analysis. Having the document in this format is essential to utilize the software (Gibbs, 2007).

2. ***Data Coding:*** The second phase of the data analysis which was carried out by the researcher was to code the transcribed data. Saldaṅa (2013) described coding in qualitative data analysis as a construct generated by the researcher that symbolizes the attributed meaning to each individual datum in order to showcase patterns, categories, emerging theory and other analytical processes. Basically, it can be regarded as how a data which is to be analysed is described (Gibbs, 2007). The first cycle of coding was manually done as the researcher is usually expected to read through the entire transcript, marking sequences of text by coding (Bryman, 2016) before it was inputted to the CAQDA software to construct a more refined hierarchical code list. It is important to note that the

---

[6] "A meticulous analysis of detailed conversation, based on a complete transcript that concludes pauses, hems and also haws" (Babbie, 2010, pg. 339).

software does not generate the code list but the researcher (Gibbs, 2007 and Saldaŋa, 2013). Although, some auto-coding functions are available in some CAQDA programs, passages have to be well organized in a way that will contain certain underlying words for this function to work effectively (Saldaŋa, 2013). Gibbs, pointed out three approaches to coding, these are:

a. Creating new codes: This approach is utilized when the researcher is guided by existing theory or expectations, so codes are not directly obtained from the data but inferred based on pre-conceived expectations about the meaning deduced from the data created without referring to the obtained data, thus, it is a researcher-derived form of coding (Braun and Clarke, 2013). This approach was not used in this study because the research is basically an exploratory study seeking to investigate factors that *could be used* to explain the level of e-banking adoption by individual bank customers in Nigeria.

b. Using existing codes: In this approach, the researcher has already developed a number of codes, thus, the main idea is to read through the document to identify content that fits the existing themes Gibbs (2007) refers to this type of coding as 'concept-driven coding This approach was also not considered appropriate for the nature of this study which is basically to examine factors that could explain low adoption of e-banking adoption in Nigeria without necessarily been confined to a set of preconceived ideas or concepts.

c. Creating new codes from the transcript: This is an inductive approach. In this case, the researcher read the text with the intention to identify the codes and the themes form the content obtained from the interviews. Gibbs (2007) & Braun and Clarke (2013) referred to this coding type as data-derived codes. The researcher considered this approach as the most suitable for this

114

study as it gives room for deeper and wider exploration of various ideas and thoughts that emerged from the interviews without being limited by exiting theory, expectations are pre-arranged codes and themes. As such emerging ideas were coded and grouped into small categories/themes to form what Creswell (2013b), termed "common ideas".

3. ***Data Analysis:*** This is the third step undertaken by the researcher towards data analysis processes. Generally, Qualitative data analysis entails three core elements and these include: data coding, merging codes into themes/categories, displaying and comparing the data in graphs, charts and tables Creswell (2013b). There are a number of ways by which qualitative data analysis can be carried out, Harding (2013) pointed out three of these approaches: Narrative Analysis (which encompasses: thematic analysis, structural analysis, interactional analysis and performative analysis (Riessman 2006), Discourse Analysis and CAQDA. The researcher however, utilized CAQDA to analyse the qualitative data used for this study. Gibbs (2007), emphasised the importance of using CAQDA in qualitative data analysis as it makes the analysis of data much simpler, precise, reliable and transparent (Gibbs, 2007). Scholars such as Babbie, (2010), Harding, (2013), and Creswell (2013b), identified a number of CAQDAs that can be used for such analysis. These programmes include: MAXQDA, ATLAS.ti, NVivo, HyperRESEARCH, AnSWR, QDA, Miner, Qualrus, SPAD etc. According to Gibbs, (2007) CAQDA software helps a researcher to have a tidy record intuitions, ideas, searches and analysis and allows access to the data so that it can be examined and analysed. Saldańa, (2013), indicated that such programmes maintain and help to organize emerging and potentially complex coding systems into a hierarchical format that can

easily be referenced. Most of these programmes as noted by Gibbs (2007) have the following basic features: (a) importation and display of documents; (b) construction of code list (mostly hierarchical); (c) retrieval of coded text; (d) examination of text that has been coded in line with the original document; and (e) writing memos in such a way that it can be linked to the outlined codes and documents. Amongst these CAQDA software, NVivo was used to analysis the qualitative data obtained for this study. This programme was chosen because it has the simplest support for hierarchical coding in the same vein as MAXQDA, it supports the use of tables for comparison (Gibbs, 2007). Moreover, this is the programme that is easily accessible to the researcher. Based on these factors, the researcher considered the use of NVivo as the most suitable and convenient CAQDA programmes. With this software, the researcher was able to carefully organize the data obtained from the interviews into a more meaningful pattern (see Appendix VI). These patterns and the emerging ideas were then interpreted by the researcher as CAQDA programmes will not do the interpretation (Gibbs, 2007). Key findings from the analysis were then presented and subsequently discussed. Figure 5.3 below show the sequence of the processes involved in the qualitative data analysis.

Figure 5.3: *Processes of Qualitative Data Analysis for the Study*
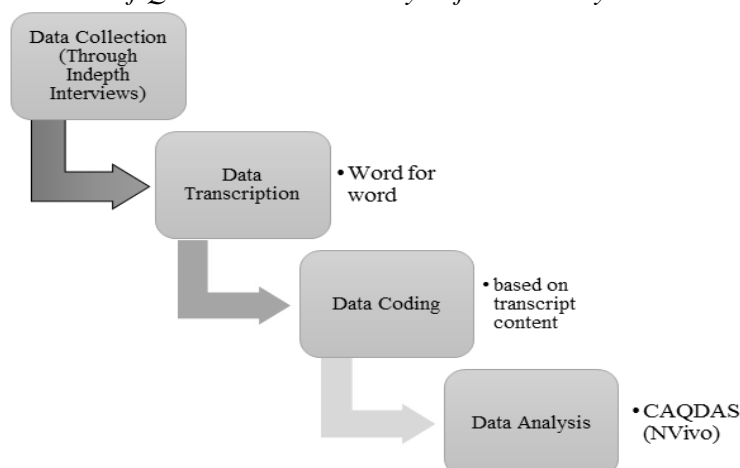
Author generated

5.12.2 *Quantitative Data: Processes of Analysis*

Swift (1996) refers to this process as the preparation of numerical data as raw data are transformed into variables that can be analysed. As far as Alreck and Settle (1995) are concerned, the central aim of data processing is to summarize the obtained data into information so as to reveal the vital and meaningful emerging patterns as well as the relationships that the data contain. Bryman, (2016) conceived this process as a way of reducing data with the aid of statistical techniques so as to be able to interpret the information appropriately. Therefore, following the face to face questionnaire administration, data obtained from the survey were prepared as follows:

1. *Verification/Sorting filled questionnaire:* All the filled questionnaires obtained from the field were carefully checked to ensure that only the ones that are properly and completely filled were used for the analysis. At this stage, inconsistent responses such as ticking not having a bank account but often use personal bank card to withdraw money were identified and corrected. Also, missing responses that are not regarded as error but a deliberate attempt not to disclose such information e.g. age category of respondent were identified as missing responses.

2. *Grouping:* Basically, grouping of the entire verified questionnaire in order to ensure that a reasonable/substantial number of respondents were obtained from each of the 19 commercial banks. To this effect, the questionnaires were grouped based on the respondents from each of the banks and the total number of respondents obtained from each bank were counted and recorded (see table 5.4).

3. *Coding:* Coding of the questionnaire is essential when preparing raw data for analysis (Swift, 1996). It involves assigning a code to the responses of the

respondents (Sekaran and Bougie, 2013). Responses to the closed-ended questions were coded. The responses to the open-ended questions were categorised and also coded to generate meaningful categories in line with the perspectives of Alreck and Settle (1995). In addition, questions on the various sections of the questionnaires were coded for easy identification. Each question was assigned a number. The very first question on the questionnaire was labelled number 1 through to the last question which was assigned 49. This resulted to a total number of 49 variables to be entered into the SPPS for appropriate data analysis.

4. ***Data Entry:*** After the questionnaire has been coded, each of the cases i.e. responses of each of the individual participants (Sekaran and Bougie, 2013) were then entered into the SPSS spreadsheet. The cases were entered into the row, while each of the variables was entered into the column section of the SPSS data editor. Therefore, a total number of 686 cases were recorded with respect to 49 variables.

5. ***Missing Values:*** Swift (1996), pointed at the importance of reporting in data analysis the number of missing values/cases so that the reader can be well informed on the possible effect this case may have on the sample as a whole and on the conclusion/findings. Based on this, the missing values identified by the researcher during the process of data verification/sorting were recoded. These missing values were observed to be *completely missing at random*[7] (Alison, 2001; Hill, 2007 and Soley-Bor, 2013) as such, it cannot be regarded as due to lack of clarity, ambiguity or perhaps too sensitive had such omissions been peculiar to a given or a set of questions. Therefore, such omissions can then be

---

[7] Probability that missing values of a variable is not related to the variable itself or other variables in the data base (Alison, 2001)

classified as missing values due to accident or a deliberate attempt by the respondent not to answer (Bryman, 2016). These missing responses were coded 99 so that SPSS will regard this as missing and not include such in the analysis (Argyrous, 1997). Also, the researcher will be able to assess the effect of the missing responses in the overall analysis. As suggested by Argyrous, this number (99) was used for easy identification as it will not in any way tally with possible values that may emerge from other variable outcomes. Missing responses in the study were not just coded but analysed through SPSS in order to be able to determine the magnitude of these cases. As shown in figure 5.4 below, result of this analysis shows that 42 variables had at least one missing values and just 2 *variables* were completely filled. Also, out of the 686 total numbers of *cases*, 615 were completed while 71 cases had at least one missing value. This gives the percentage of complete cases as 89.65% and the incomplete ones as10.35% Furthermore, out of the 28,812 possible total number of *values* 28,701 (99.61%) values were obtained while 111 (0.385%) were missing. This result shows that the percentage of the missing values is insignificant as it is very much less than 5% of the total number of cases and deleting this cases with listwise method at the point of analysis is regarded safe (SPSS Inc. 2007). The non-inclusion of these missing values in the analysis will not affect or likely bias the conclusions of the analysis (Swift, 1996).

Figure 5.4

Overall Summary of Missing Values
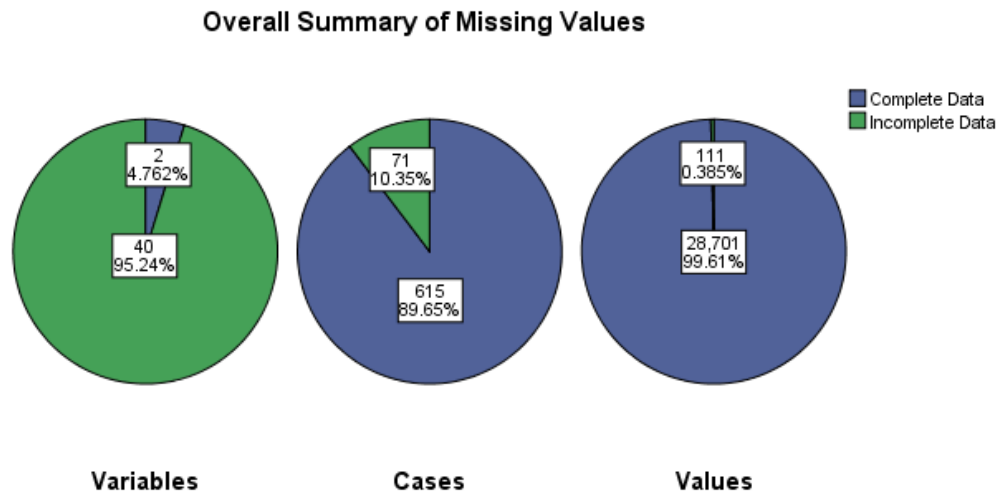
5.13   PRELIMINARY STATISTICAL TESTS

The quality of data obtained and utilized for a given study is to a large extent dependent on the design of the measuring instruments and the process used in collecting the data (Black, 2000). The underling criteria for determining the data quality according to Black is based on three concepts. These are: *validity, reliability* and the *objectivity*. In this section, these three concepts will be examined in line with this research considering that the a detailed discussion on the measuring instruments and the data collection process adopted for this study have been examined in section 5.8 and 5.9 above.

5.13.1   *Validity: A yardstick to data quality*

Validity is a test that is carried out to examine how well the adopted instrument will measure a given concept; it focuses mainly on whether the right concept has been measured (Sekaran and Bougie, 2013). Any instrument will therefore, only ensure validity if it measures what it was intended to measure (Black, 2000). Based on this the researcher considered it appropriate to carry out validity tests on the various variables that has been used to explore the level of e-banking adoption in Nigeria by individual bank customers. There are many types of validity tests. As far back as 1955, Cronbach

and Meehl identified four types of validation tests. These are predictive validity, concurrent validity, content validity, and construct validity. According to them, the predictive validity and concurrent validity are criterion-oriented. Recent scholars have either renamed, modified or added to these types of validity. For instance, Frankfort-Nachmias and Nachmias, (2008) added empirical validity to content and construct validity while Black, (2000) & Sekaran and Bougie, (2013) considered criterion-related validity as one validation type in addition to content and construct validation. However, the most common ones that will be of focus in this study are the content and the construct validity tests.

❖ *Content validity:* This ensures that the measure for an element includes a sufficient, representative and relevant set of items that tap a given concept (Maiyaki and Mokhta, 2011; Sekaran and Bougie, 2013). Basically, Maiyaki and Mokhta emphasized that this test entails a systematic assessment of the ability of the scale adopted by a researcher in a study to measure the intended concepts e.g. elements in each of the five constructs of innovation diffusion (relative advantage, compatibility, complexity, trialability, and observation). Face validity[8] and sampling validity are the two main types of content validity (Frankfort-Nachmias and Nachmias, 2008). As far as this study is concerned, the researcher adopted a face validity methods as such, a draft of the instruments used for this study was distributed to experts (supervisor, research analysts, senior colleagues, etc.) for comments on the suitability of this instrument to measuring the various construct under study, structure of the instrument as well as the clarity of each of the items to be measured. In addition, feedbacks obtained from the pilot study also enhance the validity of the instrument. Based

---

[8] The subjective evaluation of the suitability of the instrument prepared for measuring a concept while sampling validity is the adequacy of measurement of the total set of cases that belongs to category representing the variable (Frankfort-Nachmias and Nachmias, 2008).

on this, the instrument used for this study is regarded valid. However, due to the fact that face validity is usually regarded as very elementary (Davies and Hughes, 2014), construct validity was further employed to ascertain validity of the instruments utilized for this study.

❖ *Construct validity:* This showcases how well a scale or indicator accurately measures the intended concept/variable Davies & Hughes, 2014) i.e. the extent to which the scale as been able to measure appropriately the theory around which such is designed. Usually, construct validity is established by showing the correlation between a measure of a construct and a number of other measure that should be associated theoretically (in which case is referred to as convergent validity) or vary independently of it i.e. discriminant validity (Drew and Rosenthal 2003). Validity can be established through correlational analysis, factor analysis and the multitrait-multimethod matrix (Sekaran and Bougie, 2013). Correlational analysis can be used to establish both convergent and discriminant validity. A convergent validity is established if the scores obtained from the analysis indicated a high correlation. On the other hand, a discriminant correlation is established if the scores of a variable measure to predict a theory is found to be uncorrelated as envisaged (Sekaran and Bougie, 2013). A convergent validity was regarded suitable for this study since the idea is not to discriminate against predicted measure of a theory but to show that a correlation thus exists between measures that should theoretically be associated. Given that the variables are ordinal in nature, the Spearman's rho correlation; a non-parametric statistical technique was used for this analysis (Pallant 2013). Furthermore, a factor analysis (principal component factor analysis) was carried

out to also establish the unidimensionality[9] of the various constructs (Garson, 2012), thereby establishing the construct validity of the study (Tabachnick and Fidell, 2001).

However, it is essential at this point to note that in as much as validity is important it is not sufficient to ascertain the goodness of measure used in a research thus, the need for areliability test (Frankfort-Nachmias and Nachmias, 2008; Sekaran and Bougie, 2013).

5.13.2   *Reliability: A yardstick to data quality*

Reliability refers to how consistent a measure of a concept is (Bryman (2016). It is an indictor of the extent to which the measure of a construct is error free or without bias as it ensures consistency of measurement across time and across all the items in the instruments (Sekaran and Bougie, 2013). Sekaran and Bougie noted that the reliability of a measure indicates the stability and consistent nature of the instrument used to measure a concept therefore helping to examine the "goodness" of such measure.

Cronbach's alpha which is commonly used to test internal reliability was used in this study to determine the internal consistency of measure in a bid to establish the reliability of the concepts used in this study. Essentially, Cronbach's alpha calculates alpha coefficients that vary between 0 and 1. Computed alpha coefficient of 0 means no internal reliability while 1 signifies a perfect internal reliability (Black, 2000; Bryman, 2016). Black pointed out that nothing is perfect and as such most reliability values will fall in between 0 and 1. Scholars have not agreed on a particular value for internal reliability that can be regarded acceptable but a higher value means greater reliability (DeCoster, 2000). Bryman (2016) indicated that 0.80 is the typical value adopted as the rule of thumb for an acceptable Cronbach's alpha, although he claimed that 0.70 and

---

[9] is an important aspect of construct validity that implies that a set of item in a given instrument measures a common construct (Årestedt, 2013)

above is acceptable for many purposes, Berthoud (2000) regarded 0.60 as the minimum acceptable reliability coefficient.

In addition to the Cronbach's alpha, [10]item-total correlation was also adopted. Item-total correlation is basically used to measure the relationship between an item in a construct and the total score of the set of items within the scale (Robinson et.al. 1991). According to Ferketich (1991), a low corrected item-total correlation value indicates that an item is inconsistent with the other items and has failed to measure what other item measure. Nunnally and Bernstein (1994) & Field, (2013) stated that an item-total correlation of 0.3 or above is good, indicating that such item has contributed to the overall reliability of construct. Generally, item-total correlation of negative values is a major red flag which could mean that the question is unfit or ambiguous to respondents (Pope, 2009). Therefore, based on the value obtained for the item-total reliability both the relationship among these items and the internal consistency of the model can then be established (Yiu, 2014).

5.13.3 *Objectivity: A yardstick to data quality*

Objectivity has to do with how questions are presented to the respondents either written or verbal. Therefore, a research instrument that has been designed with clear and unambiguous manner is usually regarded as highly objective and this enhances the validity and the reliability of any measuring instrument (Black, 2000). As noted in sub-section 5.9.1., the research instruments were clear and precise; void of technical jargon and with clear instructions of the aim of each section and guidelines on how each section is to be completed. Based on this procedural approach, it can be concluded that the data quality of this study has been enhanced by the objective nature of the research instruments adopted after the benefit of the pilot study stage.

---

[10] Item total correlation ranges between the values 0.00 – 1.00 Item-total correlation value between 0 and 0.19 may suggests that the question is not discriminating well, values between 0.2 and 0.39 indicates good discrimination, and values 0.4 and above reveals a very good discrimination (Pope, 2009)

5.13.4 *Frequency and Percentage Distributions*

In a bid to examine the pattern of responses of each of the variables considered in this study, frequency and percentage distribution was constructed. Frankfort-Nachmias and Nachmias, (2008) consider this has an essential task of a researcher once the data has been coded and prepared for analysis. While frequency distribution showcases the number (frequencies) of observations of a given variable, the percentage distribution indicated the percentage of each observation in comparison with other variables in the category (Argyrous, 1997). This study utilized both frequency and percentage distribution to examine the socio-demographic attributes of the respondents; the assessment of respondents that operates a personal bank account; the evaluation of the respondents' level of awareness of the e-banking platforms; the examination of the complementary assets available to individual bank customers as well as the investigation of the perceptions of respondents about the extended model of the innovation attributes.

5.13.5 *Cross-tabulation (Contingency Tables)*

This is used to simply display the relationship between variables with few categories as it presents the frequencies of responses, the percentage value and can as well indicate the pattern of association (Williman, 2016). This was used in this study to investigate the association between the socio-demographic profiles of the respondents and the levels of adoption of the e-banking platforms as well as generating diagrammatic representation of this pattern of association in form of bar and pie charts.

5.13.6 *Correlation Analysis*

This form of analysis is an approach taken to establish the relationships between ordinal variables and or interval/ ratio variables so as to determine the strength and the direction

of relationship between these variables (Bryman, 2016). Pearson's r correlation (parametric statistic) and the Spearman's rho rank order correlation (non-parametric statistic) are the methods that can be used to assess the level of correlation between variables (Pallant, 2013). Usually, the Pearson's r is used when the variables are interval or ratio while the Spearman's rho is used for ordinal variables (Sekaran and Bougie, 2016) or when one variable is ordinal and the second one is interval/ration (Williman, 2016). Spearman's rho correlations analysis was used in this study to investigate the relationship between the perceptions of the scope of available e-banking services and accessible complementary assets. It was also used as one of the approach to establish the construct validity of the explanatory variables.

5.13.7 *Factor Analysis*

This statistical method of analysis is used for investigating the relationship within a group of observed variables which has been measured through some questions or particular items (Beavers et al. 2013). William, Brown and Onsman (2010) described factor analysis as a vital instrument used for developing, refining and evaluating tests, scales and measures. Apart from reducing a large number of factors/variables into smaller set, factor analysis can be used to validate a construct (Tabachnick and Fidell, 2001). Factor analysis was utilized in this study to establish the validity of the constructs in the extended model.

5.14   ORDINAL REGRESSION ANALYSIS

Ordinal regression analysis which is also known as Polytomous Universal Model (PLUM) is an extension of the general linear regression model. It is designed to accommodate ordinal categorical variables (Norusis, 2005). This model was developed in a bid to cater for the drawbacks of linear regression which cannot be used to analyse dependent variables that are ordinal (Niculescu-Aron, 2013). Multiple regression or

structural equation modelling are the alternative approaches to analysing ordinal variables (Winship and Mare, 1984). However, the ordinal nature of the variable are disregarded either by treating or replacing it with a nominal variable which will then fit into an ordinary linear model technique (Norusis, 2005; Torra et al. 2005). The fundamental problem with this approach as argued by Torra et al., (2005) is the limited use of the available information and parameters are estimated more than required.

Alternatively, Garson, (2012) suggested the use of a multivariate method for interval-level variable to analyse ordinal variable. However, Bertram (2009), emphasized that ordinal variables should not be analysed with interval statistical technique. Although, scholars such as Zumbo, and Zimmerman, (1993) largely support the use of these alternate statistical techniques to analyse ordinal variables, Smith (1974); O'Brien (1982); Norusis, (2005) and Garson, (2012) amongst others argued that the biases involved in the use of these other techniques are large thus, advocated for an appropriate technique to analyses ordinal variables. Therefore, the treatment of ordinal variable as it is, is the most sensible approach to analysis (Torra et al., 2005) given the availability of ordinal regression technique (Denham, 2010).

Ordinal regression therefore, takes into account the ranked order of the variables, thus enables analysis of data in which the outcome or responses are presented in ordered format (Fitrianto and Ghazab 2014). Unlike linear regression analysis, this technique takes into consideration the fact that the exact difference between each of the categories is unknown (Xia, et al., 2007). The aim of the ordinal regression analysis is "to model the dependence of a polytomous ordinal response on a set of predictors which can be factors or covariates" (Spais, 2006 pp. 55). Furthermore, ordinal regression has a link function. The link function according to Norusis, (2005 pp. 83) "is the function of the probabilities that results in a linear model in the parameter", it determines what goes on

the left side of the equation. The five types are: *Logit:* used for evenly distributed categories, *Complementary log-log:* used when higher categories are more probable; *Negative log-log:* used when lower categories are more probable; *Probit:* used for analyses with normally distributed variables and *Cauchit:* used when for outcomes with many extreme values. Based on these unique features of ordinal regression model, it has been considered the most appropriate statistical technique that fits the nature of the data obtained for this research mainly because the data is not normally distributed and the dependent variables have been measured on a ranked/ordinal scale (see section 5.8) With ordinal regression, level of adoption of each of the e-banking platforms with respect to each of the explanatory variables is predicted and the level of significant of each of the explanatory variables on the dependents variables is also determined.

It is important to note that just like other statistical techniques, it is essential that the assumptions of this model is met before using this model. Norusis (2005), pinpointed the assumptions of this model. These are discussed as follows:

1. *The dependent variable has to be measured on an ordinal scale* - An assessment of this criterion shows that the data can be analysed with this model because level of adoption of the e-banking platforms were measured on ordinal scale.

2. *The independent variables are either categorical, ordinal or continuous variables* – This second assumption is also fulfilled because the independent variables i.e. the extended model of Rogers are ordinal variables.

3. *Multicollinearity* – For a model to fit ordinal regression, multicollinearity should not exist among the independent variables. Multicollinearity occurs when a high degree of correlation is observed among two or more independent variables as this indicates that some of these variables are measuring the same concept

128

(Rovny, 2011). Multicollinearity of variables in ordinal regression model yields high standard error and invalid results (Greene 2000). A correlation analysis was carried out in order to test this assumption. Results presented in chapter eight show no correlation amongst the independent variables.

4. *Proportional Odds* – Also, ordinal regression model assumes that the effect of the cumulative split of the dependent variable are the same. To ensure that this assumption was not violated, a test of parallel lines was carried out for each of the models. This therefore helps to establish improvement in the fit of the general model from the null hypothesis as the observed chi-square value is expected to be large (> 0.05) to justify the non-violation of this assumption (Norusis, 2005).

5.15   THE METHODOLOGICAL FRAMEWORK OF THE RESEARCH

The figure 5.5 below shows the diagrammatic representation of the research methodological framework.

Figure 5.5: *The Methodological Framework of the Research*


```
                          SOURCES OF
                             DATA

    Secondary Sources                    Primary Sources
       for this study                      for this study

   Comparative Analysis:               Research Methods:
   E-banking starting points           Convergent Parallel
        in UK and Nigeria              Mixed Methods

 Objectives   Strategies    Path      Available      Sampling Technique:
  of Banks     Adopted   Dependency  Complementary   Quota and Purposive
              bv Banks                  Assets        Sampling Techniques

   Comparative      Qualitative Method:        Quantitative Method:
    Findings        Interview of Bank          Administration of
                        officials              questionnaires to individual
                                               bank customers and
                                               customers

   Expert witness feedback             Data analysis and
   on the research findings               findings
```

Source: Author Generated

5.16   CHAPTER SUMMARY

In this chapter, the researcher was able to establish the philosophical underpinning; the

tenet of this study rests on the realist perspectives which enables the use of mixed

research methods known as convergent parallel mixed methods. A qualitative method

(in-depth interview) was adopted to obtain data from the e-banking service providers while a quantitative method (survey questionnaire) was utilized to gather data from the service users.

Ethical issues were duly considered. This research did comply with the four general ethical principles (i.e. no harm to participants; informed consent: no invasion of privacy and no deception) as well as with the university requirements.

Furthermore, a detailed discussion on data collection processes and techniques was presented. The technique showcases the mixed methods non-probabilistic sampling approaches adopted to capture the target population (i.e. the quota sampling and the purposive sampling). The response rate was quite substantial and this was attributed largely to: the approach adopted; the presentation of the questionnaire; the structure of the questionnaire; the flexible completion time; the place of the researcher and the nature of the research. While NVivo: a Computer–Assisted Qualitative Data Analysis software was to be used to analyse qualitative data obtained for this study, ordinal regression model was considered the most appropriate statistical technique for analysing the quantitative data due to the ranked nature of the data. Preliminary statistical tests were carried out to ensure the data is valid, reliable, and objective and that it also suits the assumptions of the statistical techniques adopted. The next chapter presents the qualitative data analysis.

CHAPTER SIX
QUALITATIVE DATA ANALYSIS

6.0   INTRODUCTION

This study adopted convergent parallel mixed methods in order to explore the adoption of e-banking services by individual bank customers in Nigeria. This type of research method as noted in chapter four of this study entails the parallel utilization of two different research methods. In the case of this research, a survey questionnaire was adopted alongside the in-depth interview research method. This section, therefore, focuses on the content analysis of the in-depth interviews conducted by the researcher. It is important to note that as at the time the data for this study was collected (July – September 2015) the total number of commercial banks operating in Nigeria had reduced to 19 following series of structural changes (e.g. merger and acquisitions) in the Nigerian banking industry. Eight out of the total number of the nineteen commercial banks participated in this research. The researcher interviewed bank officials that deal with e-banking products and services in each of the participatory banks. A total of eight key e-banking officials were interviewed for this study. The in-depth interviews address issues regarding the perception of these commercial banks (e-banking service providers) where e-banking products and services are concerned. As discussed in chapter five of this study, the following were the major issues investigated in the interviews (see appendix II)

❖ The rationale for e-banking deployment by the participatory banks.

❖ The scope of the e-banking products and services provided by these commercial banks

❖ The perception of banks regarding the risks associated with the deployment of e-banking products and services.

❖ E-banking switching processes and the cost implication for adoption by individual banks.

The analyses of these major issues have been divided into four sections. Section 6.1 examines the rationale for deployment of e-banking system by banks. Section 6.2 investigates the scope of available e-banking services provided by these commercial banks and the level of patronage of their e-banking platforms. Section 6.3 evaluates the risks perceived by these commercial banks regarding e-banking products and services. The final section; section 6.4, examines e-banking switching processes and the cost implications for individual banks customers.

6.1   RATIONALE FOR DEPLOYMENT AND ADOPTION

In a bid to explore the rationale for the deployment of e-banking products and services by individual banks, this section of the interview investigates the following:

1. *The year of e-banking deployment by the participatory banks.*

2. *The rationale for the deployment of e-banking products and services by these banks.*

3. *The relationship between e-banking deployment and the 2004 consolidation policy and*

4. *The readiness of these commercial banks towards the deployment of e-banking products and services.*

6.1.1   Year of e-banking deployment

This study adopted the typology of Rogers (1995) to explore the diffusion of e-banking services as a technological innovation in the Nigerian banking industry. As discussed earlier in section 4.9, Rogers grouped innovation adopters into the following five categories; the innovators, followed by the early adopters, then the early majority, the

133

late majority and finally the laggards. However, the participatory banks could not fit into this categorization as most banks that would have showcased the continuum move of e-banking deployment as postulated by Rogers had gone into consolidation while some had liquidated. For instance, the defunct Societe Generale Bank was the innovator of e-banking in Nigeria as they were the first to introduce an e-banking platform (ATM) in Nigeria in November 1990 followed by the First Bank in 1991 (Agboola, 2003). It is also important to note that Societe Generale Bank re-branded and re-acquired its banking operational licence from the CBN in 2012 (Heritage Bank, 2015). This instance, therefore, makes it difficult to depict Roger's categorisation in this study. Moreover, while Rogers classified the different adopters' categories, he was not explicit about the time difference between each categorization. Based on this argument, participatory banks are better classified into the following two categories:

A. Those that deployed e-banking prior to the implementation of the consolidation policy.

B. Those that take up e-banking after consolidation i.e. "post-consolidation".

Table 6.0 below shows this classification.

Table 6.0: Adoption Categorization of Participatory Banks

	Category	Deployment Year	Banks
A	Prior to Consolidation	1999 - 2001	EBO - 01, EBO – 04 & EBO - 06
		2002 - 2004	EBO - 03 & EBO - 07
B	Post-Consolidation	2005 - 2007	EBO - 05 & EBO - 08
		2008 – till date	EBO - 02

Source: Author generated

Following this typology, it can be deduced from the sample selected that larger percentage of the participatory banks claimed to have taken up e-banking prior to the

implementation of the consolidation policy in 2005 while the remaining three banks acknowledged that they did not deploy e-banking earlier than 2005.

6.1.2: The rationale for the deployment of e-banking products and services by banks

Following the review of relevant literature, factors such as reduction in the operational costs (Jayawardhena and Foley 2000), liberalization of the telecommunication sector (Obe and Balogun, 2007), enactment of banking reforms (CBN, 2006) and the need for a payment system that is nationally utilized and internationally recognized (CBN, 2013) were noted as key driving forces to e-banking deployment in Nigeria. Further to this, this study will investigate other factors as perceived by commercial banks in Nigeria as the rationale for the deployment of the various e-banking products and services. This is to examine whether the deployment of e-banking by commercial banks in Nigeria was a voluntary approach or they were compelled to adopt such services by regulatory bodies or stakeholders.

Based on the information obtained from the eight interviews conducted for e-banking officials of the participatory banks, some factors were identified as the rationale for the deployment of e-banking platforms by these banks. However, these factors have been categorized by the researcher under two broad headings i.e. the external factors and internal factors. According to Hartzell (2015), internal and external environments of an organization are forces that drive change within the company. Change with respect to this study is the transformation in the banking services in Nigeria from the old traditional/manual banking to e-banking. Hartzell classified the internal driving force or rationale for this change as factors that are peculiar to the organization; they impact the success and the operational approaches of such organization and generally under the control of the organization. In line with this research, internal factors are conceived as the perceptions of individual bank officials towards the deployment of e-banking

135

products and services. These perceptions are neither a function of external influence nor in conformity with stakeholder's expectations. External factors occur outside the company and impact change inside the organization, usually, these factors are beyond the control of the organization. The identified factors are discussed under these two categorizations as follows:

Internal Factors

The following factors have been classified by the researcher as internal factors;

1. ***Reduction in Operational Costs:*** In line with the perspectives of Chiemeke et al., 2006 Salawu and Salawu, 2007, and Adewuyi 2011, the need for commercial banks to minimize their operational costs was identified by e-banking officials as the motivating factor for the deployment of e-banking products and services. This is because e-banking platforms afforded a cost-effective banking service as opposed to the manual banking services. This rationale for e-banking deployment in Nigeria has been supported by the view of three of the interviewees as follows and I quote:

   "The industry is dynamic and banks are trying to utilise solutions that are cost effective... for us in EBO - 01 bank, the rationale is clear, we want to be able to reduce our operating expenses, reducing operating expenses means you need to deploy electronic channels which are cost effective and which are cheaper to have"

   .....EBO – 01

   "The rationale was also to move customers to cheaper channels of cash withdrawal"

   .....EBO – 07

   "The low operational cost benefits is also part of the reasons why we introduced some of these e-channels"

   .....EBO – 04

136

2. ***Convenience:*** Apart from the need to reduce the operating expenses, the perceived need for convenient banking was also identified as a rationale for e-banking deployment in Nigeria by these commercial banks. Banks adopted e-banking platforms in order to provide more convenient banking transaction arrangements for their various customers. The following are views of some of the interviewees that substantiate this point:

> *" Also, banks had to source for solutions that are convenient for customers. A lot of our target market doesn't really want to come into banking hall to do transactions again; people want to be able to have control of their accounts wherever they are"*
>
> *.......EBO – 01*

Another official stresses the ease associated with e-banking services as more self-service banking transactions can be carried out. This official also perceived that the innovation as a good innovation. He stated that:

> *"E-banking services make banking a lot easier, and very convenient: at the comfort of your home or your office you don't need to visit the branch for any assistance. You can do your transfer, you can recharge your mobile phones, and you could check your mini account statement and a lot more, also you can pay a bill. This is a good innovation"*
>
> *........EBO – 02*

3. ***Reputation Management:*** Also, maintaining the reputation of the bank in the industry was perceived as a driving force to the deployment of e-banking platforms. This is because they are being seen as playing a lead role in the industry and as such innovation of this nature should be provided by them. One of the interviewees specifically noted that:

> *"As an international brand, the idea was to provide such services that befit a brand such as EBO - 06 bank, we considered options for providing services to our customers through various electronic channels, channels like the web: the internet banking, ATM. POS and then mobile banking"*
>
> *.......EBO - 06*

4. ***Capacity Management:*** The traditional banking system required all banking transactions to be conducted in the banking hall. Individual customers had to visit the branch for every form of banking transaction. This therefore resulted in a large number of individual bank customers that visited the banking hall on a daily basis. Participatory banks perceived that the deployment of e-banking services by Nigerian banks has reduced the number of customers that will need to come into the banking hall to carry out banking transactions. The view of an official corroborates this point, he noted that:

> *"One of the rationales for our deployment of e-banking platforms was to be able to reduce the need for customers to visit the branches, e-banking platforms helps us to minimise crowd at the branches"*
>
> *……….EBO - 05*

Further to this, the perception of another official in the early adoption categorization also supports this view. He noted that:

> *"Banks are trying to make sure that the number of people that are coming into the banking hall is much reduced so we can reduce our operating expenses etc."*
>
> *……….EBO – 01*

This, therefore, suggests that commercial banks have been able to support the need of their customer base more effectively because they adopted e-banking platforms.

5. ***Promotion of Transparent Banking Services:*** Another factor that was pinpointed as the rationale for the deployment of e-banking by banks in Nigeria was to promote transparency for individual bank customers in their banking transactions. It was emphasised that e-banking platforms allowed individual customers to have direct access to their personal banking activities. Customers are able to view and manage their accounts without the help of a bank official. They are able to get an update of their account status at any point in time. One of the interviewees made this point clear. He stated that:

> *"E-banking helps customers to manage their transactions and banks are more transparent to customers as they know what is going on in their bank account"*
>
> *........EBO – 03*

6. ***Focus on Personalised Banking for High Net-worth Customers:*** Findings from the interviews conducted revealed that unlike the traditional banking system where all customers had to visit the banking hall to perform banking transactions, e-banking deployment enabled banks to manage the demands of low-level customers outside the four walls of the bank. As such, basic banking services such as account update, payments of bills, daily maximum withdrawals, printing of mini bank statements etc. can be done on the ATM, purchases/payment can be done via POS and online banking etc. E-banking deployment has therefore enabled banks to focus more on personalised banking services for net worth customers. With respect to this point, an official indicated that:

> *"The rationale was to move high volume, low-value customers to cheaper channels of cash withdrawal. This was to free the bank branches and maximise personalised services to high-value customers.*
>
> *........EBO - 07*

To this effect, the provision of e-banking services by these banks has not only reduced operational costs, it has helped banks to be more innovative by accommodating the banking services required by their various customers.

7. ***Customer Satisfaction:*** Interviewees perceived the deployment of e-banking services by their banks as an avenue to satisfy their customers. This they claimed was another motivating factor to their deployment of e-banking platforms. Customer satisfaction is considered as a fundamental indicator of the performance of an organization because of its link to behavioural and economic consequences beneficial to the organization (Anderson et al. 1994). The satisfaction that customers derive from a given product or service will increase

patronage and this will sustain the organization. As they will be able to make a profit that will keep them in the industry. The perception of one of the interviewees supports this claim:

> *"There has been a huge transformation in the banking environment in Nigeria… with consolidation policy, we had a bigger bank, large customer base…..from 2005 we started having the people we could call the native and the alien. The natives are the ones who were born into technology, the alien are the people who were born prior to the advent of the technology especially the mobile, so the rationale behind e-banking deployment is to provide better customer service……a better service to the natives who are actually the future of the banking industry"*
>
> *……… EBO – 08*

From the interviews, it can also be deduced that e-banking platforms created the consciousness that banks needed to provide a sustainable banking platform as required by upcoming generations of individual banks customers.

External Factors

The following factors have been classified by the researcher as external factors because the rationale for the deployment of e-banking products and services based on the interviews conducted were due on factors that can be regarded as external to the organization. As such these banks had to adopt e-banking services in a bid to conform to the dictates and expectations of stakeholders/external environment.

1. *Merger and Acquisitions:* One of the external influences that propelled the deployment of e-banking platforms as revealed by the interviews is merger and acquisitions. Banks that had the financial capacity to acquire the ones going to liquidate maintained the e-banking services that the banks that they acquired had in place. Findings also revealed that banks that merged to form a larger capital base were influenced by the other parties that were already providing the services so as to maintain the standard of the "superior party". The following

statements from one of the interviewees indicated the impact of merger and acquisitions on e-banking deployment:

> *"When EBO - 01 Bank came into Nigeria they were operating like a small bank basically, when EBO-01 Bank bought over EBO-01-Sub1 Bank, it became a very big bank, buying EBO-01-Sub1 Bank, made the Bank to be so large. Part of the thing that EBO-01 Bank bought from EBO-01 - Sub 1 Bank were the e-channels, because this acquired Bank had all these e-channels"*
>
> *........EBO - 01*

2. ***Technological Advancement:*** Bearing in mind that e-banking services are technology-enabled channels, the consideration for incorporating this to banking services are dependent on the availability of the supportive technology. Therefore, the advancement in technology in the country served as an external influence for banks to adopt the e-banking platforms. The impact of the technological advancement is noted by one of the officials as follows:

> *"Mobile telecommunication came into Nigeria in 2003/2004 and that opened the space and in the course of that, the bank had to utilise it, because the bank needed to improve the customer service, gone are the days when people go into banking hall and you have people take tallies and stand in queues for withdrawals, so e-banking is a better way of doing business"*
>
> *.........EBO - 08*

3. ***Increased Advocacy for Banking Automation:*** Another important factor that serves as an external influence for e-banking deployment by banks is the pressure from the external world as banking activities from some parts of the world such as the UK have been made much easier and as such, can be replicated. This view is supported by the following statements:

> *"Being a global bank, there was a global influence for automating banking transactions so as to make banking less painful, easier, giving room for more transactions and also to accommodate more customers which the older form of banking wouldn't have achieved"*
>
> *.......EBO - 04*

In addition to this point, it was also noted that enlightened bank customers who have travelled abroad and utilized e-banking services expected the same services from their

Nigerian banks. The expectation for better services put pressure on commercial banks in Nigeria. An official of e-banking noted that:

> *"Nigerians travel abroad and they have been able to experience how banking is done better elsewhere, therefore, increased expectation in this regard mounted pressure on the deployment of e-banking"*
>
> *……EBO - 04*

In addition to the above view, another official identified the impact of globalization as a motivating factor to the deployment of e-banking services by banks. This official perceived the interconnection that globalization affords as a rationale for their deployment of e-banking services. He noted that:

> *"You know the world is now a global village, so it's a brilliant innovation that needs to be embraced"*
>
> *……EBO - 02*

4. ***Maintenance of Competitive Advantage:*** The need to maintain a competitive edge in the banking industry was also attributed to the deployment of e-banking services by some of the participatory banks. The dynamic nature of the banking industry necessitated the deployment of the e-banking platforms as banks regarded the provision of these services as a means to remain relevant in this business environment. According to one of the interviewees, the provision of e-banking services in Nigeria by commercial banks is essential requirement for any bank to be significant in the industry. This official affirms that:

> *"Any bank that really wants to play in the industry must have to embrace e-banking as part of the products offered to your customers…. So when you are playing in this kind of market/banking environment you must have all these products to be able to meet up with your target…. So if a bank that is as big as EBO - 01 bank doesn't have all those products for our customers we will be cheating ourselves out of the market"*
>
> *…….EBO – 01*

The deployment of e-banking services was also perceived as striving towards success. The following interview statement substantiates this claim:

"Any bank that does not have e-banking is not there yet; not competing for anything"

.......EBO - 05

Table 6.1 below shows a summary of the factors identified from the in-depth interview conducted as the rationale for the deployment of e-banking products and services by the participatory banks.

Table 6.1: *Rationale for e-banking deployment by banks*

Deployment Categorization	Banks	Internal Factors	External Factors
(A). Prior to Consolidation	EBO - 01	Operational cost reduction and convenience	Merger & acquisitions
	EBO - 03	Capacity management and transparency	None mentioned
	EBO - 04	Operational cost reduction	Increased advocacy for banking automation
	EBO - 06	Reputation Management	Technology advancement
	EBO - 07	Operational cost reduction and greater focus on personalized services	None mentioned
(B). Post-Consolidation	EBO - 05	None mentioned	Enhance competitive position
	EBO - 08	Customer satisfaction	Merger & acquisition and enhance competitive position
	EBO - 02	Customer satisfaction	Increased advocacy for banking automation by bank customers

Source: Author generated

It is evident from Table 6.1 above that banks that adopted e-banking prior to consolidation had a more intrinsic drive for change towards e-banking deployment than banks in the other category. As such banks in category A were more influenced by internal factors. They perceived convenience, promotion of transparent banking transactions, need to focus more on personalised banking for high valued customers in addition to the necessity to reduce operational as well as the need for reputation management as key yardsticks to e-banking deployment. External factors such as: merger and acquisition: technological advancement and increased need for banking automation supported their decision to adopt e-banking products and services.

Banks in category B attributed the internal rationale for the deployment of e-banking services as the need to satisfy their customers as the major yardstick for the deployment of e-banking platforms while competitive advantage, the impact of merger and acquisitions and advocacy for banking automation were also identified as key external factors for their deployment of e-banking.

Findings from these interviews revealed that apart from factors discussed in the literature review section i.e. the liberalization of the telecommunication sector (Obe and Balogun, 2007), that served as a catalyst to the inflow of electronic devices that support e-banking services, the enactment of the banking reforms (CBN, 2006, 2013) which led to merger and acquisitions and a push towards e-banking deployment by commercial banks in Nigeria, the study has been able to identify other factors. These are: *reputation management*, *promotion of transparent banking services*, *focus on personalised banking services for high net-worth banks customers* and *increased advocacy for banking automation* as the rationale for the commercial banks deployment of e-banking products and services in Nigeria.

6.1.3: *Relationship between E-Banking Deployment and Consolidation Policy*

As discussed in chapter 4 of this study, the CBN introduced the consolidation policy in 2004 in a bid to strengthen the banking industry. This policy mandated an increase in the capital base of the existing commercial banks. The impact/enactment of this policy exercise led to merger and acquisitions of certain commercial banks that could not meet the demands of this new policy. This interview question was therefore incorporated to examine the effect of the consolidation policy on the deployment of e-banking products and services by participatory banks.

Following the interviews with the e-banking officials of participatory banks, it was revealed that two banks (EBO – 06 and EBO – 04) claimed that the policy was not a

yardstick to their deployment of e-banking because these banks already had their e-banking platforms well established before the policy came into existence. In support of this view one of the two officials of the bank that claimed not to have been affected by the policy noted that:

> *"No, the consolidation did not affect our bank, the bank like you know it's very big and very liquid in terms of asset base. So, consolidation never affected the bank. It was one of the two or three banks that did not go into consolidation. It stood out on its own not until the CBN requested that we should acquire one or two banks, so consolidation never affected us"*
>
> *……. EBO - 06*

The second bank official in this category also affirms that consolidation did not directly impact on their deployment of e-banking services. However, it served as an enabler to meet up with the demands of the policy. This official claimed that:

> *"Not really, a lot of banks had adopted e-payment prior to the consolidation policy, so there is no direct correlation but e-banking served as an enabler for banks to meet up with the demands of policy"*
>
> *……..EBO – 04*

EBO – 01 Bank official stated that the Bank is not a Nigerian based bank as it origin transcends beyond the border of the country. This bank had not fully adopted e-banking prior to the consolidation exercise. The official thus agreed to the level influence of the policy on their deployment of e-banking services. He acknowledged that:

> *……. but you can't rule out the fact that EBO - 01 bank has an element/good idea as to how e-banking should be run….. after the consolidation exercise it was easy for them to drive their (EBO - 01 bank) own strategies in the market"*
>
> *……..EBO – 01*

However, there is an indication that these three banks have acquired strong liquidity asset value that enabled them to manage the impact and demands of the policy.

Findings from the interviews showed that banks in other categories have a strong relationship with the deployment of e-banking services and the consolidation policy.

These banks perceived the deployment of these platforms as an avenue to conform to the dictates of the policy. Only EBO - 02 Bank was noted to have no relationship with the policy as the bank was not in existence as at the time the policy was introduced. The following statements substantiate this point:

> *"Yes there is, the policy direction in the country on e-business was taken shape at that time and the long-term benefit was clear, hence the early deployment decision of the bank to start with ATM and electronic cash transfers"*
>
> *…….EBO – 07*

In addition to the envisaged long-term benefits for deploying the e-channels as indicated by the official above, the need for the expansion of technologically enabled channels was regarded as essential to enable some of the participatory banks to fulfil the dictates of the consolidation policy. To this effect, one of the interviewees pointed that:

> *"Yes, it was a push. …Like I said earlier, the brain behind consolidation in 2004 was that CBN realized the country had small banks, we don't have big banks that will take up mega-transactions, so there was a need for us to consolidate to make bank bigger and when banks are big they are able to meet the need of the customers and the citizens better and that meant that they had to expand in terms of technology"*
>
> *……..EBO - 08*

And as part of enacting the consolidation policy, some of the participatory banks merged in order to meet the demands of this policy. As such the merger of banks that already provide e-banking services to their customers with another one that do not offer such services made the policy a facilitating agent to e-banking deployment as banks without e-banking services had to embrace this e-channels.

> *"Definitely, there is a relationship between e-banking deployment and the policy. EBO-05-Sub1, EBO-05-Sub2, EBO-05-Sub3, EBO-05-Sub4 and EBO-05-Sub5 were the banks that actually merged to form EBO - 05 Bank in 2006. The formation of those entire banks brought about synergy. A bank that was not formerly electronic oriented now coming to merge with banks that are into e-banking gave them knowledge in that area to also upgrade. Consolidation made so many banks to come together so this gave room for banks that hasn't been providing e-banking the mandate to incorporate that to enable merger"*
>
> *…….EBO - 05*

This point is further strengthened by the statement made by one of the officials. He noted that:

> *"EBO–03 Bank merged with EBO–03-Sub1 Bank, EBO–03-Sub1 banks hasn't got so many of their customers on e-banking platform what they had was "flash me cash" EBO – 03 Bank educated EBO–03-Sub1 customers to do more of e-banking. The" flash me cash" still brings the customer to the banking hall to process the transaction and withdraw the cash. In the long run, when EBO – 03 Bank merged with EBO–03-Sub1. EBO – 03 Bank also has to enlarge the platform to accommodate the increased number of customers"*
>
> *………EBO - 03*

In essence, findings from the various interviews regarding the relationship between e-banking deployment and the consolidation policy suggest that, for virtually all the participatory banks, there is a direct relationship between their deployment of the e-banking channels and consolidation policy. Table 6.2 shows the summary of the relationship between the consolidation policy and e-banking deployment by commercial banks in Nigeria.

Table 6.2: *Consolidation policy and e-banking adoption by banks*

Category	Bank	Relationship between Consolidation and E-banking Deployment	Reasons
(A.) Prior to Consolidation	EBO - 01	Yes	Acquisition of another bank
	EBO – 03	Yes	Merger with another bank
	EBO – 04	No	Already adopted e-platforms
	EBO - 06	No	Had strong capital base
	EBO - 07	Yes	Envisaged the benefits in line with the policy directives
(B.) Post-Consolidation	EBO – 05	Yes	with other banks
	EBO - 08	Yes	To meet the demands of the policy
	EBO - 02	Not applicable	Bank was not in existence as at the time of the policy

Source: Author generated based on interview findings

6.1.4: The readiness of Banks towards e-banking deployment

This question seeks to examine the state of preparedness of commercial banks in Nigeria towards e-banking deployment. Although, findings of this study revealed that consolidation policy significantly influenced directly or indirectly the deployment of e-banking services, this variable has been included in order to have a better understand of the readiness of commercial banks in Nigeria towards e-banking deployment. The interviews conducted indicated that EBO – 04 Bank, EBO – 07 Bank as well as EBO – 02 Bank claimed their full readiness towards e-banking deployment. The deployment of e-channels was said to be easy for EBO – 04 Bank because they have fewer branches across the nation compared to other commercial banks with large branch network. As such, this smaller scale of operation facilitated fast diffusion of e-banking across their various branches. In support of this, one of the interviewees stated that:

> *"The fact that we (EBO – 04 Bank) did not have so many branches in the country unlike other banks such as like First Bank Plc helped us to drive e-banking"*
> *…….EBO - 04*

Apart from having fewer branches, as noted above, it was also deduced from the interview that EBO – 06 Bank had to upgrade their system first before they take up e-banking services. This system upgrade enabled a smooth transition from the traditional manual banking services to the e-banking services. This was considered necessary in order not to tarnish the reputation of the organization by introducing services that do not support the existing mechanisms. The following statements demonstrate the preparedness of participatory banks towards e-banking deployment:

> *"Before you go into such services, you have to ensure that your system will be able to somehow work with the applications of such channels that e-banking services build upon, ……..In essence, Yes, we first put our systems in place before adopting those channels. The disadvantage of adopting the channels before upgrading your system is something that can damage the reputation and the image of the company…that means the bank was ready before we went into it"*
> *…….EBO - 06*

148

Furthermore, EBO - 02 Bank also acknowledged full readiness for their e-banking take up. They ensured 24hours IT personnel support and stable supply of internet: This claim is supported by the bank official who stated that:

> *"Our bank was fully prepared, we were fully prepared for the e-banking services, our IT officials were on ground 24hours, 7days a week to ensure that there is stable network, network is one key problem we have here in Nigeria….to avoid when customers make transfers and then will have transaction dispute at the end of the day. We have the most stable network and there is hardly any issue or problem. On rare occasion when there are issues they are resolved within 24hours or less than 24hours so to say"*
>
> *……EBO - 02*

From the above findings, it can be deduced that the degree of preparedness of these banks helped them to make provision for the possible challenges of e-banking even before adopting it and as such they were able to put in place measures to curtail envisaged difficulties. Other Banks could not be described as fully prepared for e-banking deployment as at the time they adopted e-banking products and services. Some officials noted that they had to introduce the platform one after the other. The deployment of e-banking services for banks in this category is concerned to enable them to remain relevant in the industry and also to comply with the dictates of the CBN. An official in his examination of each of the e-banking platforms stated that:

> *"I can say EBO – 03 Bank's readiness as at the time of deployment was like 60% in terms of the facilities on the ground. For internet banking, it was quite very slow as it involves having to work with customers' email, phones and with mobile applications it involves customers switching phones"*
>
> *………EBO - 03*

This also indicated that the switching processes are time-consuming. Worthy of note is the fact that while merger and acquisitions have been established as an enabling factor to e-banking deployment by some commercial banks in Nigeria, the variation in the level of e-banking deployment by banks that composed the newly formed bank impacts on the degree to which the bank can be regarded as fully prepared. Findings from the interview indicated that one of the five banks that formed the new banks after

consolidation was not in the right position to adopt the e-platforms as they are a typical example of the "old generation" bank. Although, the official acknowledged that the transition did not pose a problem for the old bank to embrace e-banking as they needed to be provided with necessary equipment for such upgrade. However, it could not be affirmed that the bank was fully ready to take up e-banking as at the time of deployment. This view is supported by the following interview statements:

> *"Most of the banks that merged were basically modern banks.... they were already well positioned with e-banking, so incorporating EBO-05-Sub4 Bank that wasn't too much into e-banking didn't pose too many problems. All they did was to provide all the equipment necessary for this 'old' bank to enable it fall in line with the market that they have already had and that wasn't a problem at all for EBO-05-Sub4 Bank to operate accordingly. That is why one can say that to some extent EBO - 05 bank was in the right position to adopt e-banking"*
>
> *.........EBO - 05*

Furthermore, findings from the interview pointed to the capital-intensive nature of these platforms as a barrier to the level of preparedness of e-banking deployment by some of the participatory banks. This resulted in the gradual deployment of these platforms by some of the commercial banks. The following statements substantiate this point:

> *"You will agree with me that these platforms we are talking about are also capital intensive for example the average ATM you are talking about that banks started with was as if you are building another branch because is also capital intensive for instance you need to put an ATM in all of the branches, one ATM per branch when banks were having 100, 200 branches .... and right now the cost of installing an ATM is close to 10million naira in each of the branches.......for virtually all the banks including EBO – 08 Bank we had to take it one at a time.........For example, we had to start with ATM and from ATM banks now started looking into internet banking...... so I will say to you that yes, the bank when it started, it wasn't that they were not ready, they were but we just had to take it one at a time"*
>
> *.......EBO - 08*

However, EBO-07 bank remained an exception has they claimed their readiness for these platforms. The official affirmed that:

> *"The bank is approaching the maturity stage. Several initiatives have been implemented on multiple channels with the view of turning the virtual channels into virtual branches*

with both corporate and personal customers being able to carry out virtually all their banking transacting needs without visiting the bank branch"

.........EBO - 07

From the foregoing, this study has been able to establish that EBO - 01 Bank, EBO - 04 Bank, EBO-06 Bank and EBO-08 Bank were fully prepared to adopt the platforms as at the time of deployment. This is because of the following reasons:

- ❖ *They first had their systems upgraded to support e-banking channels*

- ❖ *They ensured IT officials were available 24hours.*

- ❖ *Prior implementation of multiple channels which aided e-banking services*

EBO - 03 Bank, EBO - 05 Bank, and EBO-08 could not be regarded as fully prepared for e-banking deployment because of the following factors:

- ❖ *The switching processes were time-consuming*

- ❖ *The need to upgrade supporting mechanisms*

- ❖ *The deployment of e-banking services is capital intensive.*

In summary, the researcher has been able to establish the following in this section:

1. Identified the category of the participatory banks based on the take up of e-banking prior to consolidation and the post-consolidation. This categorization revealed that majority of the sample banks had taken up e-banking prior to the implementation of the consolidation policy in 2005.

2. Identified the internal and the external rationale for the deployment of e-banking services by the sample banks. Findings suggest that Banks that had taken up e-banking prior to the implementation of the consolidation policy were more internally driven towards e-banking deployment than banks in the other category.

3. Examined and established a strong relationship between e-banking deployment and consolidation policy for some of the participatory banks.

4. Examined the readiness of the participatory banks towards e-banking deployment and as such, EBO - 01 Bank, EBO-04 Bank, EBO-06 and EBO-08 were fully prepared for the deployment of e-banking services compared to banks in other categories.

6.2   AVAILABLE E-BANKING SERVICES

This section addresses the available e-banking services provided by these commercial banks in Nigeria and the various efforts of participatory banks towards increasing the patronage of e-banking services by individual bank customers.

6.2.1   Scope of Available E-Banking Services

The consideration of the scope of available e-banking services provided by the participatory banks is to examine the number of e-banking services that each of these banks provides. Findings from the interviews revealed that all the banks provide e-banking channels that this study considers except telephone banking. One of the officials pointed that:

> *"We provide all the e-banking services except the telephone banking"*
>
> *.........EBO - 01*

The inability of these banks to provide telephone banking has been attributed to lack of technological infrastructure and the lack of adequate security measures required to ensure a secured operation of this channel in Nigeria. All the participatory banks provided four e-banking platforms out of the five e-banking platforms this study considers. The platforms provided are as follows: ATM, Online, POS and Mobile banking. Some of the bank officials indicated reasons why they can only provide four of these platforms as follows:

> *"What we have is mostly mobile so telephone banking is not a product selling presently in Nigeria, I doubt if there is any bank doing telephone banking, because of the security implication you need to be sure who is speaking on the other side and our kind of*

152

environment isn't sophisticated like the UK. So telephone banking hasn't really started in Nigeria.

........EBO – 01

Another official supports this view, emphasising the current risk involved in the provision of telephone banking as a hindrance to providing such service. This official stated that:

"The Telephone banking platform hasn't been fully developed because of the risks involved, at the moment customers can only make calls to the bank to make confirmation regarding a transaction: whether a payment has been made or not, no form of telephone banking transaction is allowed"

……….EBO - 04

It was also observed that banks that have the facilities to provide telephone banking do not offer the service because of the risks involved. One of the officials stated that:

"We have all the five platforms, but the telephone banking is not too pronounced at the moment, most banks have played down in this including EBO – 08 Bank because of the risks involved, how do you recognize the voice of the customer"

…….EBO - 08

In sum, findings from these interviews indicates that all participatory banks currently provide ATM, POS, Mobile and Online e-banking services to individual banks customer in Nigeria. Telephone banking is not functional. Security issues were pinpointed as the major challenges in addition to the lack of adequate telephone networks.

6.2.2 *The most patronised e-banking platform in terms of volume and value of transactions*

In 2011, a report from the CBN noted that the Nigerian economy is still very much cash-based owing to the fact that most of the e-payment platforms are not usually patronized. This report revealed that ATM patronage is the highest amongst the e-banking services provided by commercial banks in Nigeria as 85% of the channels of payment in Nigeria are done through ATM and over the counter (OTC) withdrawals, 14% through cheque while point of sales (POS) and web payment are 1% and 0% respectively.

153

In January 2012, the CBN started the first phase implementation of the cash policy. The cash policy as discussed in chapter four of this study is one of the CBN policies that should amongst others encourage the usage of other e-banking channels. The CBN claimed that the first phase of the implementation which started in Lagos state Nigeria was successful and as such the next phase was subsequently extended to additional five states: Anambra, Abia, Rivers, Ogun and Kano coupled with the Federal; territory, Abuja. However, Thisday newspaper (2013) still indicated that other forms of e-banking channels are hardly patronized by customers. While the CBN has fully implemented the cash policy across the nation since July 1st, 2014, the findings from the interviews conducted revealed that ATM is still the most patronized in terms of volume and value of banking transactions. All the interviewees agreed to this view. One of the officials noted that:

> *"Currently, the most patronized platform in terms of volume and value of transaction is the ATM"*
>
> *........EBO – 08*

6.2.3   Reasons for the most Patronized E-banking Platforms

The following factors have been attributed to the high level of ATM patronage amongst other e-banking platforms:

1. ***Cash Based Nature of the Economy:*** The cash-based nature of the Nigerian economy is still affecting the level of patronage of other e-banking platforms provided by these commercial banks. As people want to have access to quick cash. It was, therefore, noted that one of the reasons why most customers patronized ATM is because it gives them quick access to their money. One of the interviewees stated that:

> *"The Nigerian economy is still cash-based. People want to see their cash and its only ATM that can provide this"*
>
> *……EBO - 01*

In support of this claim, another official highlighted the cash-based nature of the economy as a major difference between a developed economy such as the UK and a developing economy like Nigeria. Customers therefore have preference for cash payment as opposed to the utilization of other e-payment options. He indicated that:

> *" The system is not yet a card based system like in the UK, cash is still very much allowed and people need access to cash to run their daily activities"*
>
> *…….EBO - 06*

2. ***Regulatory Framework:*** It was also noted that another factor that has encouraged an increase in the patronage of the ATM by individual bank customers is because of the regulatory framework that enforces the usage of the ATM for withdrawals less than N100, 000.00. An official noted that:

> *"At a particular time, customers were mandated to use ATM, for withdrawals less than N100, 000.00, customers are charged if they make such withdrawals over the counter and so people were forced to use ATM to avoid charges"*
>
> *……EBO - 03*

3. ***Compatibility with other ATMs:*** Apart from enabling quick access to cash, ATM card of a given bank can be used on the ATM machine of any other bank has also facilitated the high level of patronage of this e-banking platform by individual bank customers. This point was affirmed by an official who stated that:

> *"ATM gives quick cash and customers are able to use other banks' ATM machine as a result, we have more customers using this platform"*
>
> *……..EBO - 04*

This point is further strengthened by another interviewee who indicated that attributes of centralized services of ATM and the POS contributed to increased patronage of this platform. This official pointed that:

> *"For instance, ATM and POS are centralised shared services supported directly by the CBN wherein a cardholder from any bank can patronise an ATM or POS of any other bank. This cannot be said of online and mobile banking where a customer from any bank cannot access his/her account from any other bank or providers' platform"*
>
> *……..EBO - 07*

4. ***Easy mode of operation:*** Another factor that was attributed to the high level of deployment of the ATM by individual bank customers is because the innovation penetrated faster than any other e-banking channels. In addition, ATM was noted to be easy to operate as both the learned and the uneducated customers are able to perform basic banking transactions on the machine, unlike other e-banking platforms. The following interview statements was made in support of this point:

> *"ATM circulates faster more than any other electronic channels of the banking arm, even in all banks. A common man that cannot read nor write will get to the ATM and perform his basic transactions like withdrawal from the ATM"*
>
> *……..EBO – 05*

> *" why the ATM? It's because of the level of literacy of the people. You can use it whether you are native or alien, whether you are lettered or not, and you can withdraw small amount of money, you pay bills on ATM e.g. DSTV subscription, make transfers and withdrawals"*
>
> *……..EBO - 08*

In summary, these interview findings suggested that the cash oriented nature of the Nigerian economy; the CBN regulations and the easy mode of operation of the ATM support the ATM deployment more than any other e-banking platforms.

6.2.4 Categories of customers of the most patronized e-banking channel

Following the various interviews conducted, it was revealed that the working class, the youths and those at the "lower end of the market" are the major user of the ATM platform. The following statements substantiate this point:

"The youths use it more than the old ones, because we still have some old people that will tell you they don't want ATM cards, that they just want to enter the banking hall write my cheque or write my booklet and get my money but we have lots of youths using it, so it's youths"

.... *(EBO - 05)*

"People on the lower end of the market, these are people who don't want to go on the mobile and transfer money"

.... *(EBO - 08)*

6.2.5 Publicity for low patronized channels

All the bank officials interviewed agreed to the view that certain e-banking platforms have been less patronized and as a result, a range of methods to facilitate usage have been devised. Banks have been mandated to implement the cash policy as directed by the CBN. This policy discourages people from utilizing cash especially for heavy transactions as customers are charged for depositing or withdrawing cash that exceeds the daily limit on their personal account. One of the officials affirms that:

" the cash light policy charges customer for excess of money that you put into an account, as you are charged if you go over certain limit"

........*EBO - 08*

Apart from this effort of the CBN (through the enactment of cash policy) towards the facilitation of e-banking adoption by individual bank customers, commercial banks in Nigeria have also devised various means to this effect. Based on the interviews conducted, the following were the approaches used by the participatory banks towards the encouragement of individual bank customers to e-banking adoption:

1. Advertisement: Banks utilized various advertising platforms. Such as newspaper adverts, bank branch signage, ATM displays, fliers and pamphlets to publicise e-banking services. Some of the banks officials stated that:

"The bank does adverts on the media, distributes leaflets, paste posters as a means of publicity"

...........*EBO - 04*

"We have taken our time to advertise on our channels, even on the ATM when you insert your card it tells you about e-banking services that we provide so we have provided such structure for awareness to let customers know that they can also use this service.

……EBO - 06

2. *Promotional offers:* Offering incentives to individual customers was another approach that these banks employed to encourage increased patronage of the less adopted platforms. The following statements by some of the interviewees support this assertion:

"Also, we encourage customers by giving incentives to online banking users, such as earning some reward points, giving out prizes, promotional offers etc."

……EBO - 01

"And we offer POS services and we give incentives to our customers who make use of our POS unlike other banks just to encourage our customers to make use of their card on POS devices"

……..EBO - 02

"Our bank also organizes some promotional offers as ways to encourage customers to try some of the platforms"

……EBO – 03

3. *Telemarketing and customer fairs:* Banks in an effort to increase patronage of their e-banking platforms engage in telemarketing: directly soliciting prospective customers to adopt e-banking products and services. In addition, some of these banks also organize customer fairs, where they showcase how some of these e-banking platforms work. To support of this view, one of the officials stated that:

"We do telemarket our e-banking products and services to our customers, also, our contact centres do the same and we also do customer fairs, from one city to another, teaching customers on how to use e-banking products and services".

……..EBO - 02

Further to this, a platform for customers' feedback regarding their perception about the available e-banking products and services was stated as part of the initiatives to enhance e-banking adoption. One of the officials called attention to their outbound calls platform to getting customers' assessment of services. This official stated that:

> *"The bank has net promoter score: it's a platform or it's an outbound call that seeks to know how customers feel about our services"*
>
> *……EBO - 03*

4. *Automatic registration of accounts on online platform:* Also, as a means of encouraging customers to patronize the online banking platform which has been indicated as one of those platforms that are less patronized by individual customers, an official pointed that customers with valid email addresses are automatically enrolled on their online banking platforms and login detail are then forwarded to such customers' email. In support of this point, an official stated that:

> *"Part of our strategies of trying to make sure that the product sells more is that we automatically enrol every customer to the platform, so once the account is opened the system sends login details to the customer's email, with this customer can only view your transaction online it is only when you now want to do transfer from your account that you then need to notify the bank and the bank will now open your profile and activate that"*
>
> *……EBO - 01*

4. *Public enlightenment and persuasion:* Banks have also identified the need to educate customers on how to utilize other e-banking platforms. They are making a conscious effort to ensure that customers have an avenue to familiarize themselves with these platforms. Also creating awareness on the benefits of these platforms such as; enhancing the safety of their financial resources (a major emphasis in their enlightenment campaigns). While they are persuading their customers to adopt these platforms, they have been able to identify and are trying to checkmate possible occurrences that may have given customers who have tried such platforms unpleasant experience. The findings from some of the officials substantiate these points:

> *"Also, the bank has a team that tells and enlighten customers on how to use this platform and showcase the benefit……It is understandable that some customers have unpleasant experience with some of the platforms, we are working and fixing that also, ensuring that customers know what to do and places to turn to when issues arise" ……..EBO – 03*

According to an official, persuading the old people who are not so interested in the e-platforms was indicated as another strategy to facilitating e-banking adoption by their customers. This official confirmed that:

> *"Yes we often time encourage them, those category are the old people, so often time we persuade them we tell them, we inform them of the comfort they are missing especially at times when they come to the banking hall and they see crowd or they have to be on the queue and they show some kind of discomfort for having to wait so long. At such instance, we take the opportunity to tell them about ATM, we let them know if they have collected ATM cards this would have saved them the stress of being in the queue, those are the things we do to encourage customers to use it, and we persuade them and tell them the benefits of ATM that's what we do".*
>
> *........EBO - 05*

Banks are also trying to allay the fears of customers regarding the safety of these platforms in their enlightenment campaigns. The effort regarding this was pinpointed by one of the interviewees who affirmed that:

> *"We engage in constant advert in terms of security, for instance, enlightenments of the risk of keeping huge cash within a business environment is what the use of POS in your store will safeguard. Making online transfers rather than carrying cash will safeguard against cash robbery and theft"*
>
> *........EBO - 08*

5. ***Commitment towards the provision of efficient e-banking services:*** *Officials of participatory banks* perceived the reliability of e-banking as an avenue to gaining increased patronage of the available e-channels by individual customer. The recognition of this factor has facilitated their committed to the provision of efficient e-banking services by employing agents that can manage effectively some of these e-banking platforms. According to one of the interviewees, there are agents employed specifically to monitor the POS services in various outlets, they are to ensure that POS services are constantly working so that customers can be motivated to use their bank card to pay for purchases: The following statements supports this point:

"What we do in EBO - 08 bank is that we have POS agents that are primarily employed to manage POS to make sure that POS is working, they go to the terminals once a while to go and check the machine and interact with customers and they even go and check their own card on the POS to make sure that the cards are actually working and that has helped to increase patronage on our various POS terminals"

........EBO – 08

In summary, findings from this section of the interviews regarding the publicity medium that banks are employing to increase the adoption of the less patronized e-banking products and services revealed that commercial banks in Nigeria have not only provided major e-banking platforms for individual banks customers, they are taking various approaches (discussed above) towards facilitating and increasing adoption of platforms that are less patronized. Advertisements, incentives, public enlightenments, automated registration on online platforms and feedback platforms were the key approaches/strategies that participatory banks have adopted to increase e-banking patronage.

6.3   PERCEPTIONS OF BANKS ABOUT LOW PATRONAGE OF E-BANKING PLATFORMS

In question 5 above, the investigation of the approaches that participatory banks are utilizing to publicise e-banking platforms (i.e. the online banking, POS and the mobile e-banking) that individual customers have not fully adopted in the same manner they have adopted the ATM have been carried out. However, this variable focuses on the perceptions of banks regarding the resistance of their individual customers to adoption of these low patronage platforms. The understanding of this will help to determine whether the perceptions of banks (who are the e-banking services providers) regarding this issue are the same with the individual bank customers (the service users).

It is believed that discrepancies in the perception of banks and individual bank customers regarding factors that cause low patronage of other e-banking platforms may affect the efforts of banks and the CBN (the regulatory body) towards the employment and implementation of a suitable approach to increase adoption of these products and services. It should be noted that, while this question is mainly directed to the e-banking service providers, the perception of the service users have been investigated separately through a quantitative research method and findings have been discussed in chapter seven to corroborate the significance and effect of this variable. Following the interviews conducted, nine factors were perceived by the e-banking officials to be responsible for customers' resistance to the usage of other e-banking platforms. These factors are discussed as follows:

1. Doubt: Some of the bank officials perceived that individual customers have been resistant towards adopting other platforms because they doubt the efficacy of other platforms. For instance, one of the interviewees stated that:

> *"Many customers have this fear that these other platforms may not work"*
>
> *........EBO - 08*

2. Security Concern: Participatory banks also perceived the security of these platforms a factor debarring customers from adopting other e-banking platforms. The risk of losing money to online fraudsters hinders a lot of customers from trying other e-banking platforms. One of the officials noted that:

> *"We have some wonderful set of individuals whose focus is to hack into accounts and that why a lot of Nigerians don't want to do electronic or online payments from their account"*
>
> *..........EBO - 01*

3. Lack of Adequate Internet Services: Internet facilities remain one of the major enabling mechanisms that will facilitate the smooth adoption of other e-banking services. Lack or inadequate supply or access to this facility was perceived by bank officials as a hindrance to the adoption of other products and services. The cost of a fast

and reliable internet services can hardly be afforded by an average Nigerian. The statements below support this view:

> *"For instance, to enjoy the online banking services you need a fast internet service. This for a customer is a cost, you pay close toN5, 000.00 to N10, 000.00, and for POS, if the network is not stable it affects the usage, card holders gets frustrated even the merchants and this affects the adoption of the system even though these services have been made available by bank for customers to enjoy"*
>
> *………EBO - 06*

Lack of access to the internet was mentioned by another official who stated that:

> *"A lot of Nigerians ….the target customers don't really have access to the internet"*
>
> *………EBO - 01*

4. Preference for Cash: Based on the findings from the interview, it was deduced that there is a cultural influence on e-banking adoption. The general preference for cash by Nigerians tend to have impacted on the adoption of e-banking platforms that easily gives access to cash (ATM) compared to other platforms. One of the officials affirms that:

> *"Like I said, there is this culture that an average Nigerian wants to hold cash that is why ATM usage is on the high side"*
>
> *…….. EBO - 08*

5. Lack of Enabling Devices: Banks have also perceived that the effective adoption of less patronised e-banking platforms by individual bank customers is dependent on the ability of customers to possess enabling electronic devices such as smartphones, laptops and access to a desktop computer etc. Customers that do not have and cannot afford such electronic devices were perceived to be disinterested in the adoption of these other platforms of e-banking. This will therefore impact on the overall adoption of these innovations despite the fact that these services have been made available to individual bank customers. In this regard, an official noted that:

> *"it all boils down to an individual, if an individual does not have a smartphone or cannot afford it they tend not to be interested in such things"*
>
> *…….EBO - 02*

163

6. Poor Infrastructural Facilities: Although, commercial banks are making effort to increase patronage of the various e-banking platforms they have provided, the poor state of infrastructural facilities in the country pose a problem for banks to effectively deliver their e-banking services. Bank officials thus, perceive that the poor state of infrastructure influences the perception of customers about the effectiveness of these services and as such this result in the rate of service failure. The following statement supports this view:

> "Instability of current infrastructure affects the willingness of customers to adopt these channels. Poor infrastructure leads to higher service failure rate"
>
> .... EBO - 07

7. Low level of literacy: The level of education of bank customers was another factor that banks have observed to influence the adoption of e-banking services by bank customers. Those customers who have not received a formal education tend to be less interested in e-banking adoption. As they are yet to fully comprehend the benefits of such services. An official noted that:

> "For the uneducated customers, they seem not to be interested because they don't really want to understand the advantages especially the old ones, they don't really know how to use these electronic means of banking that's why they don't use them"
>
> ....EBO - 02

8. Resistance to Change: Sample banks are of the opinion that customers are not adopting e-banking platforms because people are generally resistant to change. Lack of willingness to change from the old traditional means of carrying banking transaction to utilization of electronic channels. Some customers believe that they are susceptible to fraudsters should they adopt these e-banking products and services and this perception according to the bank officials inhibits the adoption of these platforms. This view is demonstrated by the following statement:

> "Basically, some people are just rigid to change, I don't know whether this word is the right word the use: laggards, we still have some laggards in the country who don't really

believe in all these electronic banking and they believe that electronic banking is highly susceptible to fraud, so those are the reasons why some still reframe from using such channel"

.............EBO - 05

9. Ignorance: Ignorance of individual bank customers was the last factor pinpointed by the interviewees as a factor resisting the full adoption of e-banking channels in Nigeria. Banks also perceive that customers generally tend to have assumptions about incurring service charges when they patronize some of these other platforms. And this notion debars a lot from even trying out these products and services. Lack of awareness about the existence of some of these products was also pointed at as a barrier to customers' utilization of these channels. An official of one of the leading commercial banks in the country noted that:

"The problem lies with the customer, not the bank side, as customers are not fully aware of the advantages until they need help, maybe because of having to call: use their airtime or because they are not sure the platform exist and it works. In sum ignorance is the major factor, customers are not willing to patronize such option cos it's free"

..........EBO - 06

In summary, the researcher has been able to establish in this section that sample banks provide all the e-banking services that the study focuses on except for telephone banking due to security implications. ATM was confirmed to be the most patronized e-banking platform in terms of volume and value of banking transaction. Various efforts of Nigerian banks toward facilitating adoption of less patronized platforms were examined. To this effect publicity strategies such as media adverts, and public enlightenments in addition to offering incentives as well as automated registration of customers on online platforms and feedback platforms were pinpointed as key strategies employed by banks to increase utilization of less patronised platforms.

The Nine factors were raised by the interviewees regarding their perceptions about the resistance of individual bank customers to e-banking adoption. Findings revealed that

banks from their perspective believe that factors militating against the adoption of e-banking services by individual customers are external to the banks and as far as they are concerned they have fulfilled their part by making these products and services available to all in addition to creating awareness and facilitating and encouraging adoption processes. Therefore, customers and other stakeholders are expected to play their part for full adoption of these services to take place. Ignorance, lack of enabling mechanisms/ electronic device, cultural influence, low level of education and general resistance to change were perceived by these officials as a major barrier to e-banking adoption by individual customer.

6.4   PERCEIVED RISKS FOR BANKS AND INDIVIDUAL CUSTOMERS

This section of the interview explored the risks associated with the provision e-banking services as perceived by participatory banks. To this effect, the researcher will investigate the following variables:

1. *The perception of banks regarding the risks identified by their individual customers about e-banking services.*

2. *The efforts of bank to deal with perceived risks*

3. *Banks checks and balances to curtail e-banking fraud*

6.4.1   Perceived Risks by Banks

In the interviews conducted, that participatory banks expressed their concern over the risks they are exposed to by providing e-banking services. The following were perceived by the bank officials as their major concern in this regard:

1. Security Issues – Participatory banks expressed concern over the volatile nature of the environment in which they are operating as they experience security threats on a

daily basis. Therefore, securing these platforms was stated as a challenge to these services. Below are the responses of some of the interviewee to illustrate this point.

"All these e-platforms are prone to fraudulent activities. On a daily basis, we get informed of fraud cases, we have cases where a customer's card it in his pocket and somehow, someone is withdrawing money from his account far away using the same card. We have issues like that on a regular basis. Major threat is fraud"

………EBO – 01

The paramount need to ensure the security of these platforms has made banks go extra miles. This extra effort is illustrated by one of the interviewees noted that:

"In fact, the e-banking has a lot of challenges and we had to put some security features because fraudsters like to always act ahead of the bank so the bank had to think outside the box to see how they can stop that from happening

……..EBO - 08

A further emphasis was placed on hackers' activities on customers account. This form of risk was reiterated by another official who pointed that:

"some of the risks include fraudster hacking into internet banking, people hacking into emails"

……..EBO – 03

2. Inadequate Infrastructure: Infrastructural facilities such as electricity and internet services were considered by interviewees as essential e-banking complementary assets. They indicated that banks do experience challenges in ensuring adequate provision of these supporting mechanisms to facilitate the smooth running of their e-banking products and services. The inadequacies of these facilities pose a big threat to their service delivery. According to one of the participants, the success of e-banking channels is dependent on an adequate supply of internet services and as such the Internet Service Providers (ISPs) are key to facilitating smooth running of e-banking services. In this regard, some of the officials have the following views:

"if you want to run the ATM you must be able to connect each of the ATM location to the head office, how do you achieve that without the internet. If you want to deploy POS terminals to merchant location, how do you get that done, because the machine needs to be

linked to the central server, how do you achieve that? You need the internet. So the internet provision in Nigeria is not there at all, so banks have to make extra effort to provide all of these things to keep the products up and running. These are major threats to e-banking deployment"

.....EBO - 01

Apart from providing these infrastructures, the reliability of these amenities is essential to ensure successful adoption of these products and services. Another interviewee stresses the importance of this view. This official affirmed that:

"Yeah, there are risks, at times if the link is not up and running, it all boils down to links and when I say link, I mean the internet service provider. The link has to be effective for those channels to service the customers. .....We have MTN and we have Glo that provides internet services for some of these banks and at times the link might be down. If the link is down we stand the risk of losing customers to other competitors i.e. other bank who can boast of reliable ATM services such as First Bank, so that's the risk"

...........EBO - 05

In addition, the impact of the third-party service provider was indicated as having significant impact on e-banking services. One of the interviewees in the early adoption category acknowledged that:

"The providers of supportive platform mechanisms are what make those platforms work effectively so this is to an extent dependent on third party providers like telecommunication providers"

.........EBO – 06

3. Machine Error: Another form of risk that banks have identified regarding the provision of e-banking services has to do with faults that some of these platforms sometimes develop. While this was stated to be minimal, banks lose money when the ATM, for instance develops faults and the machine dispenses more than what customer has requested. An official noted that:

"There are times that ATM makes error: dispensing error may be surcharge or overpaid due to programming so at time banks might lose money but this is minimal anyway"

......EBO – 05

4. Resistance to Change: The cash policy was enforced by the CBN as part of the strategy to minimize cash based transactions thus, promoting the usage of e-banking products and services. However, it was noted in the interview that customers are

finding it difficult to adjust to the new system of using e-platforms; dropping the old habits of handling cash to pay via terminals such as the POS and conducting online banking transactions. This has been challenging and has generated high of resistance to banks' ability to comply with the CBN dictates. The following interview statements substantiate this point:

> *"Introducing technology based platform means trying to reduce cash transactions, so people should do most of their transactions using the internet, mobile phones and payment cards. Now for customers who are used to cash it's going to be very difficult for the bank to say we are scrapping everything so customers should begin to use your card. People are not used to this"*
>
> *........EBO - 08*
>
> *"Then talking about CBN regulations, CBN has been trying but people are resistant to the necessary changes. We experience high resistance from the people"*
>
> *....... EBO - 06)*

In sum, findings from this section of the interview regarding the issue of the perceived risk by banks about their deployment of e-banking platforms revealed that the security of these e-banking platforms which they provide has been a major challenge to the banking industry. Another major risk to e-banking deployment as identified by the interviewees is the poor state of infrastructural facilities in the country. This to a large extent determines the effectiveness and the acceptability of the various e-banking platforms. Also, the possibility of their platforms to malfunction has also been an issue of concern to the industry. The general level of resistance to e-banking platforms has also made conformity to the CBN dictates a challenge. All these factors make it challenging for banks to facilitate the adoption of e-banking platforms.

6.4.2   Perceived Risks Regarding Individual Bank Customers

While banks are conscious of the risks involved in the provision of e-banking services to their individual customers, they are also aware of the reservations that their customers have towards the utilization of the various e-banking platforms they have put in place.

Interviewees were able to identify individual customers' perception of the risks involved with e-banking adoption. Apart from the issue of cost that the customer will have to bear to utilize e-banking services such as the internet service charges, arrangement for alternative power supply, customers according to these officials have reservations towards the effectiveness of these platforms. Keeping safe their e-banking login details have also posed a challenge in addition to the fear of coping with the financial loss should things go wrong. These factors are discussed as follows:

1. High cost of fast and reliable internet services: Internet services that enable these platforms had to be individually sourced by customers to utilize e-banking services such as the internet and the mobile banking. Customers need to subscribe for internet services from the ISPs. The monthly charges for this subscription are quite high. An official noted that:

> *"To enjoy some of these services customers need a fast internet service. This costs as high as 5,000.00 to N10, 000.00 a month"*
>
> *…… EBO - 06)*

2. Unstable power supply: The extra costs that customer will have to bear to adopt and retain the adoption of some of the e-banking platform has been indicated to be a disadvantage to customers. The unstable power supply will necessitate customers to go extra mile to providing alternative sources of power such as a back-up generator. Bank officials are of the opinion that even if they choose to introduce other forms of e-banking services to individual bank customers aside from the ones they currently provide, customers may not be able to adopt them. This is because of their concern regarding the unstable supply of electricity in the country. It is unlikely that customers will be willing to utilize power generating set in a bid to perform banking services. The following statement supports this view:

> *"The power situation in the country is not helping the growth of electronic banking most especially for us in EBO - 01 bank, we have a lot of products we are trying to come up with*

but when you look at the acceptability from our customers' end we are at a disadvantage. If we turn out these products, who is going to use them? How are customers going to have access to them? They will need power and, unfortunately, we don't have power, as am speaking with you, have been running on a generator for the past 4hrs. How many people will be able to run on a generator in order to have access to banking services?"

……..EBO - 01

3. The Loss of personal banking information: The possibility of losing banking details to fraudsters is one other factor that banks have noted as risks that hinder customers from using the e-banking platforms. Two of the interviewees affirmed that:

"Yes, customers seem to be afraid regarding some of the e-banking platforms such as customers losing their credentials to fraudsters, in the case of internet banking. For mobile banking, customers feel they may lose their phones and their details may be exposed. Other issues like; payment error, loss of pin, ignorantly giving out their mobile banking details/pin are risks they don't want to be exposed to and would rather prefer not adopt these platforms"

……….EBO – 03

A further emphasis was placed on being exposed to the risks of losing security PIN by individual customers. This fear was noted by another official who indicated that:

"Also, a number will not use ATM because they are afraid they may lose the security pin"

……EBO – 04

4. Scepticism about e-banking platforms: Banks also perceived that customers are not so comfortable conducting their banking transaction through the internet. They feel they are susceptible to such risks as exposing their financial information to everyone as they believe that anyone can log on to the website and access their information. Customers prefer to deal with bank officials so that they can be sure who is responsible for their banking activities rather than doing it themselves. This they believe will help them minimize their risks and also reduces their chances of being stranded should such e-channels needed at a point in time fail to work. Two of the interviewees confirmed this view, they indicated that:

"Many customers are still sceptical about online banking and as a result, will not use it"

……EBO – 04

"In most cases, some will tell you that they are not comfortable conducting their banking transactions via the internet....they believe anyone can log into that website and probably hack into their account. That is a major reason why a lot of customers don't want to use such channels... people always believe in physical consummation of transaction, so they always manage their risks and that's why some customers restrain from using certain e-banking channels. And at times when the ATM it couldn't dispense cash, probably it was not loaded or there is no services or the service is down....customer is stranded, these are risks that customers foresees and are restrained from using such channels"

........EBO - 05

From the foregoing, factors such as high cost of reliable internet services, additional cost of alternate power supply, risk of losing login details and doubt about the security and reliability of the e-banking platforms are the key issues that banks have perceived as risks foreseen by their customers which are militating against the adoption of e-banking products and services made available by banks.

6.4.3 Dealing with perceived risks

This question focuses on how participatory banks have been able to deal with the various risks identified in the last two questions. Considering the "unsafe" nature of the banking industry in Nigeria, commercial banks in Nigeria have not only been saddled with the responsibility of providing e-banking products and services but also to allay fears of their customers toward the security of the systems in order to encourage more patronage. To this effect, participatory banks have been able to employ the following strategies:

1. Constant sensitization: Interviewees noted that banks engaged in constant sensitization of their customers. This they carry out through channels such as ATM display screen, telephone, emails and text messages. They also notify customers of secured websites that are safe and secure for customers to patronize. The following interview statements corroborates this point:

"Any time customers call the contact centre we remind customers not to give out their personal details to anyone not even to bank officials. Anytime the bank sends out emails

there is always a footnote telling customers never to give out pin to any bank officials, should if anybody pretend to be bank officials"

<div align="right">*……..EBO - 03*</div>

"On the internet banking, EBO - 05 Bank do have a list of websites that we can guarantee their safety to our customer, so if they perform banking transactions, on these sites there is nothing like fraud, we have a list of such websites"

<div align="right">*…….EBO - 05*</div>

"Again there has been a lot of education, a lot of awareness because the fraudsters always want to get ahead of the bank, so we also are trying to educate our customers every time. Fraudsters send emails to a lot of people saying EBO – 08 Bank wants to upgrade their system and they ask people to use a link forwarded to them to upgrade their account. So we keep sending customers messages via email, text messages, TV advert, etc. to disregard such. The awareness level is so high and that has made transaction safe and increased peoples 'confidence to do their transactions on the various platforms that we have"

<div align="right">*….. EBO – 08*</div>

2. Development of a robust security system: As part of the efforts to dealing with perceived risks, some banks have been able to develop a robust security system which is being monitored on a periodic basis. This they make customers aware of so they can be assured of the safety of these platforms. In support of this view an official affirms:

"Our bank has been able to consider the risks associated with each e-banking platform and has been able to develop a more robust online security system. For instance, the ATM constantly display a security conscious messages for customers we also let our customers know the fact that their bank runs a periodic security check on these platforms"

<div align="right">*…..EBO - 04*</div>

The frequent monitoring of the security of these platforms was also pinpointed by another bank official who claims that:

"The bank periodically runs security checks on their e-banking platforms that customers use"

<div align="right">*……..EBO – 06*</div>

3. Provision of complaint resolution desks: Following the interviews conducted, it was deduced that banks are aware of the challenges or difficulties that customers may face while using any of the e-banking platforms. Therefore, in addition to providing these services and ensuring they are working smoothly, they have made provision for

complaint resolution desks where customers grievances are treated. One of the officials stated that:

> "Banks have had to make extra effort to provide all of these products and they are up and running. We have fraud desk where customers' complaints are treated"

<div align="right">........EBO - 01</div>

4. Usage of alternative energy channels and cost-effective solutions: Lack of adequate power supply was identified in previous sections as one of the risks involved in ensuring the effective and efficient provision of e-banking platforms. Also, banks perceived this as one of the factors responsible for customers' resistance to the adoption of e-banking products and services. Therefore, they employed alternative energy channels such as the solar energy so as to power their various e-platforms. Banks have as well created an avenue whereby they use Wi-Fi and other cost-effective devices to link up their POS merchants so as to ensure that the services are running. One of the interviewees indicated that:

> "For power, what we do in EBO - 01 bank is to look for alternate energy to power some of these products and services, we have ATM that we run on solar energy, we have some of our POS terminals that have to be run on solar energy to be able to operate effectively, so we have a lot of alternate energy channels that are backing up some of our devices wherever they are located. But for the provision of internet services, well, it's still very tasking but what we have been able to do is to look at cost effective ways by which we can provide internet services if you take a typical POS, for example, we have been able to link up our merchant location using Wi-Fi and some smaller cost-effective devices to make sure that those devices and terminals are running on the internet without affecting the productivity of those platforms"

<div align="right">........EBO – 01</div>

5. Ability to boast of excellent e-banking services: According to some of the participatory officials, another means of dealing with the risks associated with the adoption of e-banking services is by providing excellent services in which the bank can boast of and as such, alleviating the fears of customers and potential e-banking

customers regarding the effectiveness and the efficiency of these platforms. The following interview statements supports this view:

> "*And as a way of building customers' confidence, the bank boasts about the fact that their system hasn't been compromised*"
>
> *........EBO - 04*

Another interviewee emphasised this factor as follows:

> "*first and foremost you must be able to boast of excellent service. If you can beat your chest that you offer excellent service, for instance that ATM is 24hours reliable, of course, customers will definitely patronise you*"
>
> *......EBO – 05*

6. Dialogue with the CBN: It was also revealed from the interview that banks do have dialogue with and make recommendations for the CBN about how the available e-payment systems can be improved to the best interest of customers. One of the officials of the early adopted pointed that:

> "*The bank is an active member of the bankers committee, thus meets with the national payment system of CBN who regulates the industry at such meeting we make recommendation to improve the system through this we work hand in hand to make the system work in such a way that it will favour the customers*"
>
> *........EBO – 06*

6.4.4   Checks and Balances to E-banking Frauds

Commercial banks in Nigeria have devised means to control the activities of fraudsters regarding e-banking services. The following are some of the measures banks have put in place to curtail e-banking fraudulent activities:

1. Provision of Fraud Desks: The CBN has mandated all banks to have a fraud desk opened 24hours a day so that customers can contact their bank whenever they notice suspicious transactions on their accounts. In view of this, two officials stated that:

> "*Yes, we have what we call fraud desk, so when any of our customer have complained about his/her account being defrauded through any of the electronic banking channels, there is a desk that takes care of that, when customer's complaints get to that desk they can be rest assured that the bank will definitely investigate what really happened, we get to the extent of*

apprehending the culprit behind it and of course, we prosecute some of those culprits too. That's as far as fraud is concerned"

<div align="right">*........EBO – 01*</div>

" let me add this, recently CBN has issued a directive that helps to have a desk that is fraud alert EBO - 05 Bank always comply with any policy, any regulation from the apex bank: CBN. So we have that in place already so if you notice any fraud, any malpractices on your account, once you alert that desk we have a phone number that operates 24hrs, we have email that is open 24hrs throughout the whole week so once you alert that desk they quickly take step on your account either to block access to your account these are ways that the bank has put up and we sensitize our customers regarding this, we send text messages to them to alert them that these are the things they can do once they notice anything unusual on their account"

<div align="right">*..........EBO - 05*</div>

Banks also, sometimes block unusual transactions on the accounts of their customers. One of the interviewees stated that:

"Anytime the bank notice an unusual transaction on a certain account it is immediately reported to the fraud unit so that the customers can be called to confirm such transaction. And then the account will be frozen if the transaction is not from the account holder"

<div align="right">*......EBO – 03*</div>

2. Introduction of Chip and Personal Identification Number (PIN)

In addition to the development of robust security systems for the e-banking platforms, the CBN mandated the introduction of the chip and pin bank card as an additional security feature. Unlike what hitherto exist where cards can just be swiped to perform a transaction, these security features make it difficult for fraudsters to clone bank cards. It also hinders anyone from using the card without providing the PIN number. Some of the official claims confirm this point as follows:

"What we do is to sensitize the customers so as not to disclose their card details/log on details to anybody, for the banks platforms, we have put checks in place to make sure that our internet banking transfer platforms cannot be hacked into by anybody, we have put measures in place to make sure that they are secured. Now the CBN has mandated banks to adopt the chip and PIN method for cards payment unlike the swipe only method that initially existed which recorded a large number of fraudulent transactions since swiping cards will put a transaction through. Now if someone takes a card to swipe it will not work without the pin. On the ATM, the bank is aware of skimming devices by fraudsters on the keypads of ATMs but the bank has skimming device detector"

<div align="right">*........EBO - 06*</div>

To substantiate this point, another interview indicated that the positive impact of the introduction of the chip and PIN as follows:

> "Security of the platform discouraged people from using the platform as there were many cases of clone cards used to withdraw money from customers account prior to the introduction of chip and PIN features on the card…. ATM, when it started one of the problems people had was that the card did not have a chip so it was easy for people to clone cards. So what the bank did was to add additional security features on the card: chip and PIN so it became difficult to clone a card".
>
> ………EBO - 08

3. The introduction of double authorization checks: Another approach adopted by banks to curtailing the activities of fraudsters on the various e-banking platforms is by introducing two-level authorization checks before a transaction can be successful where online banking is concerned. While customers are expected to provide answers to the security question, a token which randomly generates a four digits number was also added to the security checks. Furthermore, a mandatory profile screening of individual customers at the point of registration was put in place by some banks. These have helped to minimize the activities of fraudsters on the e-banking channels. The following views corroborate these points:

> "In terms of internet banking it has become very delicate, when it first started you put in your security passcode, security questions, one of the challenges is that when it first started some of the security questions were questions that people could easily decode……so if anyone gets hold of your email and then send a link to you and you go to that site they will be able to get your password….. To safeguards this, EBO - 08 Bank had to come up with two levels of authorization, yes you have the security question, you also have a token which generates a four digits number randomly, so for you to have access to my internet banking, you must have access to my token, so now the system ask for Password, and the number generated by the token, so the token has helped minimize the risk to the a minimum"
>
> ……….. EBO- 08

Another interviewee confirmed this view. He indicated that:

> "We have put in place the following checks: Mandatory profile screen during registration; mandatory user profile with user name and password; mandatory use of second-factor authentication for transacting on all platforms"
>
> ……EBO – 07

In summary, what banks have basically done about curtailing the activities of fraudsters on e-banking platforms is to create robust security systems via the introduction of chip and PIN bank cards, enforcing two-level authorization checks and also safeguarding fraudulent transactions on customers' accounts by blocking suspicious banking transactions.

6.5 SWITCHING COST IMPLICATIONS OF E-BANKING

This section examines the perceptions of the commercial banks in Nigeria about the cost implications for individual bank customers to adopt the available e-banking platforms. Basically, this section focuses on e-banking switching processes and the cost implications from the perspectives of participatory banks.

6.5.1 E-banking Switching Processes

Burnham et al., (2003) identified three different categories of switching costs: The *procedural* switching costs, the *relational* switching costs and the *financial* switching costs. As discussed in chapter four of this study, procedural switching costs focus on the loss of time and efforts required to switch to a given innovation. As far as this study is concerned, this cost has been examined in the literature review with respect to the time, procedure or processes and efforts that individual bank customers will require to switching to e-banking platforms. The relational switching cost emphasizes the psychological and the emotional discomfort that customers may experience as a result of switching from the manual banking systems to e-banking platforms e.g. loss of face to face customer service relationship. The third category of switching costs is the financial switching costs and this referred to the financially quantifiable resources.

6.5.1.1 *The Procedural Switching Costs*

Based on the findings from the interviews conducted, all the officials interviewed claimed that the procedural switching costs for an individual bank customer to adopt e-banking products and services are quite minimal. All the participatory bank officials interviewed claimed that the processing time to get individual bank customers on many of their e-banking platforms is usually within 24hours depending on the kind of service. Customers are usually required to fill e-banking services request form which is made available in any of their branches. An official stated that:

> *"to switch to e-banking is straight forward…to get any of the products or any of these services there are forms to fill, for payment (bank) cards when you open an account with EBO - 01 Bank, the system automatically creates a card for you by default, so when you open an account you already have a card added to your acct, …….. To do transfers online, there are forms to fill……..For merchants that require POS terminals in their location, there are forms to fill too for the machine to be deployed"*
>
> *……..EBO - 01*

It was also noted that the duration for the request forms to be processed is quite small. Depending on the kind of product, a maximum of 5 working days is needed to process and activate e-banking platforms. This processing time in their opinion is not time-consuming. As it now takes less time than what was previously obtainable. One of the interviewees made a comment on the brevity of the processing time. He stated that:

> *"Switching processes to any of the e-platforms takes few minute"*
>
> *…..EBO – 03*

The simple process involved in switching to e-banking process was highlighted by another official who revealed that:

> *"For a new customer that has no account with the bank, you only need walk into any of the branches to fill a one-page form which has options of all these services, you only need to click on the one you want"*
>
> *……EBO - 06*

On a general note, it was also indicated that the processing time for many e-banking products such as the ATM cards for individual customers takes 24hours or less. The following interview statements support this view:

> *"The duration needed for the forms to be processed, depends on the product, for us in EBO - 01 bank, to get most of the products you can walk into any of the branches and they will be able to enable you and for a few other products too, you may need to wait for about 24hrs for it to be activated, when you are requesting for a typical card, for instance, it will take five working days for you to get it"*
>
> *…..EBO - 01*

Once a request form is properly filled and submitted, e-banking services such as ATM cards can be obtained at the point of request. To this effect, an official confirmed that:

> *"You just fill a form; ATM request form, then within 24hrs your ATM is ready but even as at that we have instant ATM card that you get at the point of you requesting for your ATM card so it doesn't really take much time initially it used to be about 7days to 2weeks, and then they cut it down to 5days, now its instantly, once you request for our ATM cards you get it except you want it customized which takes longer time"*
>
> *…….EBO – 05*

Another official reiterated the efforts of banks to towards ensuring quick switching processes as follow:

> *"Processing time is less than 24hrs. Once you enter the bank, for the internet banking, for instance, they capture your data, put it on the system within 5min. basically, all is immediate once you made your request. The POS is immediately, it is when we do not have it in the branch that it takes 24-48hrs to get people have it installed. But when it's in store the POS agent goes to install it immediately once the account is opened"*
>
> *……… EBO - 08*

This is put in place so as to minimize the negative impact that results from elongating processing time to avoid hindering individual customers' adoption of such services. In addition, customers can switch to e-banking services by making a one-time visit to any of the outlets strengthens this claim as another official noted that:

> *"If customers go to any of our outlets with all the requirement and details, within 24hours the account will be activated but if you want to make online transfer there is a PIN that is always giving to a customer that PIN takes between 24-48hours to get the PIN. Customer can log in*

180

> *on their website and register directly; a few questions are been asked to get registered but such customer cannot make transfer without the pin, it is this pin that takes 24-48 hours"*
>
> *……. EBO - 01*

The minimal nature of the procedural switching costs to e-banking by individual bank customers was also emphasised by another official who noted that the process of adoption is simple as customers only have to fill the request form appropriately. It was stated that that:

> *"To register for internet and mobile banking, all that is required is to fill our e-business form, fill your details in and it will be created on our e-platform it's as simple as that……..if customers goes to any of our outlets with all the requirement and details, within 24hours the account will be activated"*
>
> *……EBO – 02*

> *"The Online banking takes about 24hours to get activated once you put the necessary things in place I mean necessary document, within 24hours you get it doing, it not even up to 24hours."*
>
> *…….EBO - 05*

Banks also issue instant bank cards which a customer can get immediately at any of the branches. Only bank cards that have been requested to have extra features such as accounts holder's name or pictures embossed on it will require 5 working days to get processed after the application form has been completed. This was emphasized by one of the officials who stated that:

> *"depending on the type of card, we have majorly two types of card in EBO - 01 bank, there is one that you can walk in the bank and get it almost immediately, in any of the branches, we call it instant card, if you now want your name to be embossed on the card you need to wait for another five working days, it takes 5 working days once you fill the form"*
>
> *……..EBO - 01*

It is important to note that apart from the fact that the customized ATM cards take longer processing time, customers are charged extra for this service. According to one of the officials:

> *"some customized ATM cards for instance if you want your pictures to be on it, you want your wedding picture to be on it and that just takes relatively one week but the customized ones come with additional cost".*
>
> *…….EBO – 05*

The instant issuance of bank cards by some of the participatory banks is a strategy employed to get ahead of competitors. An official corroborates this point as follows:

"What the bank is doing is to make you get your ATM card instantly at the point of you requesting, just a way of portraying that we are ahead of other competitors who will give you 2-3days to get your ATM card"

.......EBO - 05

In the same vein that bank cards can be issued at the bank at the point of request, some of the participatory banks claimed that individual customers can switch to online banking as soon as they make such request at any of the branches as necessary login details are forwarded to such customer before the close of the businesses for the day. This view was expressed by one of the official as follows:

"For the internet banking, it is done immediately at the branch, when you fill the form today by close of business, you get email alert advising you of your username and your password, for mobile banking it is same thing too because it's done at the bank branch. For POS, it takes 5 working days because some vendors will be involved to fix that for merchant after the form is submitted"

.... EBO – 01

As a way of facilitating the adoption of online banking platform, some banks make it possible for customers to open an online account without having to visit the branch:

"As you are in the UK, you can log in into EBO - 05 Bank website and open account by yourself for your own use, there are processes. You log in into EBO - 05 Bank website you go to account opening section, you fill in your information, there is a place you sign and scan your signature, once all the necessary information has been filled your account will be opened. We call it global account opening"

.......EBO – 05

6.5.1.2   *The Relational Switching Costs*

In line with the perspective of Burnham et al. (2003), participatory banks claimed to have also minimised the relational switching costs associated with e-banking adoption for individual customers so as to enhance smooth and easy adoption. To this effect, banks have employed certain approaches to encourage in order to minimise the effect of

the relational switching costs of these services where individual bank customers are concerned. These approaches include the following:

1. Standby consultants: Following the interviews conducted, it was revealed that some of the participatory banks recruited personnel solely to assist customers with e-banking products and services. One of the officials affirms that:

> *"There are consultants in all the branches that the bank has recruited to assist customers to help customers with this"*
>
> *..........EBO - 03*

Recruiting consultants to assist customers with any of the e-banking products and services will serve as a transition phase from the manual banking (where bank official carry out all banking transaction for customers) to e-banking (the self-service phase). This is expected to reduce or possibly eliminate the psychological and the emotional discomfort that customers may experience as a result of switching from the manual banking systems to e-banking platforms.

2. Simple switching procedure: Another form of strategy that banks have employed to reduce the effect of the relational switching costs is by making the switching process simple for individual bank customers. This stance is supported by the view of one of the interviewees who indicated that:

> *"A 3 stage Self-service registration to authenticate the customer provides a minimal barrier to switching*
>
> *.......EBO - 07*

3. Multi-purpose bank card: Banks now issues internet enabled bank cards as opposed to initial ATM cards which are solely for withdrawal purposes. This form of bank card enables customers to make withdrawal on the ATM and also make various purchases such as online payment. This is expected to minimise the complexity and discomfort that customers may experience if these functions were to be performed by separate bank cards. An official noted that:

"The bank card that EBO - 05 bank gives can work on all electronic channels, ATM, POS, internet banking, payment online, the ATM cards we give to you will perform all those functions. Our ATM cards are usually the internet enabled when a customer requests that they want it activated we activate it instantly even at the point of you collecting it. So it's just that singular ATM that we give to you that performs all that function and work on e-banking channels such as internet banking, POS"

…..EBO - 05

4. Quick production of bank card: It was deduced from the interview that the possible delay that may be generated should bank card production centre be centralized has been eliminated because every branch has the facility to produced bank cards. As a result, the relational switching costs for individual customers are minimised. One of the interviewees pointed that:

"For instance for EBO - 08 Bank if you open an account now you get your ATM card immediately every branch has the machine that produces the ATM card"

……… EBO - 08

5. Compatibility with device: Some of the participatory banks adopted a form of mobile banking that is compatible with any kind of phone as such customers do not necessarily have to possess a smartphone to adopt this form of e-banking product. An official affirms that:

"Our Mobile banking works with all kinds of phone"

…..EBO - 03

The approach of making use of all types of mobile phones for the mobile banking was made explicit by another official who explained that the bank uses an Unstructured Supplementary Service Data (USSD) String Solution also known as Quick codes or Features Codes. Its operation is similar to the way GSM Cellular phone communicates with service provider. The USSD allow customers to have access to various services through the use of short codes. Therefore, The USSD which they bank employed enables customers to adopt mobile banking irrespective of the kind of phone they possess. It is worthy of note that customers who have smartphones have the option of

downloading the mobile banking app of the bank on their phone. This view is supported by the following interview statements made by one of the officials:

> *"The mobile banking works with any kind of phone, what we use in our bank is a USSD string solution whereby you just dial some strings of numbers and you are live on internet banking solution. However, we have an app, which you need to install if you are using android phone/windows phone that can also be done as you are filling your e-banking request form to get you enabled."*
>
> *........EBO - 01*

It was also realized that some banks are still making efforts towards improving the mobile banking as they plan to introduce mobile banking app. This was made clear by one of the interviewees who stated that:

> *"but currently, our mobile banking works with all kinds of phone. The bank is about introducing an app that will allow customers to do mobile banking on their mobile devices"*
>
> *.....EBO - 03*

The possibility of some of the participatory banks to accommodate various mobile devices on the mobile banking has been perceived to reduce the discomfort (i.e. the relational switching costs) that customers may experience should the adoption of mobile banking necessitates a change of mobile phone. For instance, those who may find smartphones complex to use may be dissuaded from adopting mobile banking.

6. Elimination of Third Party Cost: As discussed in the literature review of this study, the manual banking has as part of it demerits the cost of moving paper money from one location to the other. This cost encompasses the involvement of third party services such as security officers in addition to securing insurance cover. These additional costs as well as the stress it generates to move cash has been eliminated as a result of the introduction of e-banking services. For instance, the usage of POS terminal eliminates this extra cost associated with the manual banking thus, justifying the essence of the relational switching cost. One of the interviewees emphasised that:

"The use of POS discourages people from taking cash to retailers' premises because for the bank to come and pick up the cash it means the bank has to come with arm guards, pay insurance, move the money to CBN so the money that is being saved from moving and processing cash. The cost of processing this cash has been deployed into technology....."POS is capital intensive and what the banks have done is to absorb the cost so we give POS to customers free of charge. So once you open your account we give you a POS free, cos the bank is trying to eliminate the cost of processing cash,"

.... EBO – 08

In summary, the question regarding the switching processes of e-banking adoption has been considered. The findings from the various interviews about these processes showcase the procedural switching costs as well as the relational switching costs as conceptualised by Burnham et al., (2003). Findings indicated that officials who participated in this study perceived that their banks have minimised the effect of both the procedural switching costs and the relational switching costs to facilitate e-banking adoption by individual bank customers. This is due to the fact that banks have employed the following strategies: minimise the processing time for switching to e-banking; recruitment of consultant to help customers with e-banking products and services; introduction of a multipurpose bank card; accommodating all kinds of mobile phones on mobile banking platforms and the elimination of the third party cost.

6.5.1.3   *The Financial Switching Costs*

This variable investigates the financial switching costs that will be imposed on customers for adopting e-banking products and services. The financial switching costs as described in the last subsection refer to the financially quantifiable resources. This type of cost for the purpose of this analysis has been divided into two types and these are: the direct financial switching costs implications and the indirect financial switching costs implication.

1. Direct Financial Switching Costs Implications

The direct financial switching costs are regarded by the researcher in line with the perspective of Burnham et al., (2003) as quantifiable financial resources that individual bank customers will have to expend directly so as to adopt e-banking products and services.

Following the interviews conducted, all the interviewees considered the adoption of e-banking platforms by individual bank customers to have no cost implications. They claimed that banks have already made available the platforms and provided assistance and guidance on how to utilize the platforms. Moreover, they are of the opinion that no charge whatsoever is levied on customers for processing their request to switch to these platforms. The extract below from one of the interviews substantiates this stance.

"Customers are not charged any processing fee"

.......EBO - 04

Another official of one of the leading commercial banks perceives that no cost is really associated with switching to e-banking. He affirmed that:

"There is no cost per se"

......EBO - 06

However, while some officials acknowledged the involvement of a form of direct switching costs to e-banking adoption where individual bank customers are concerned they claimed that this cost is relatively nothing. To support this view, an official noted that;

"ATM cards are free once you register; the only one you have to pay to apply is the MasterCard which is 1,000Naiara. MasterCard has an expiration date and at renewal you pay 1,000Naira".

.... EBO - 02

It is worthy of note that, while some banks give their customers ATM cards free without any charge, some banks do charge their customers but assumed that such charges are

relatively insignificant implying that this cost should be affordable to all. On this note, one of the interviewees stated that:

> "As regards the financial cost it's relatively nothing, for instance, ATM card is issued at a cost of 1,000 Naira and it carries two years expiry date on it"
>
> .... EBO - 05

Another official also confirmed this point, in his opinion; everyone should be able to afford the financial switching costs because they are perceived to be cheap. This official stated that:

> "Relatively the cost of getting into any of the platforms is relatively cheap for anyone who wants to get on it. The cost of a card is about 1, 000 Naira and the card is valid for about three years this is quite affordable for everyone. For the mobile banking, all you need to do is to get a token, a token is about 2, 500 naira and that's all"
>
> ....EBO - 08

It is worthy of note of the fact that, some of the participatory banks do charge their customers per transaction for the online banking. An interviewee confirms this view. He confirmed that:

> "For the online banking: customers pay charges per transaction"
>
> ....EBO - 04

These charges according to one of the officials vary as it depends on the volume of transaction. He affirmed that:

> "For online inter-bank transfers done for a customer in the banking hall, the customer is charged about 105.00Naira per transaction. For transaction volume that is above 2million naira, the customer is charged 525.00Naira"
>
> .... EBO - 08

2. Indirect Financial Switching Costs Implications

The indirect financial switching cost is referred to as the financially quantifiable resources that individual bank customers are expected to expend on the enabling mechanisms/devices that support e-banking adoption and retention. In this case, customers are not directly charged by banks but by the third party that supplies or provides these enabling mechanisms.

It was deduced from the interviewees that customers will have to bear certain switching costs to fully benefit from all the platforms provided by the commercial banks in Nigeria. Although, participatory bank officials claimed that the financial switching cost is relatively nothing, a further investigation of this variable during the interviews revealed the existence of such additional costs which the researcher describes as indirect financial switching costs. Costs in this category include the costs of purchasing internet data, cost of acquiring electronic devices such as mobile phone or upgrading the existing one to suit compatibility with e-banking products and services, the cost of electricity supply etc. Individual customers are expected to bear costs in this category before they can fully adopt e-banking. The following statement from one of the interviewees confirm this idea of the indirect financial switching costs:

> *"No cost implication to adopt the e-banking services……….you can attempt to open an account via the bank website and ask for that service, but you cannot do so much because the bank wants to be sure who you are and that can't be confirmed online and needs your internet data to do so"*
>
> *……. EBO - 06*

It is also important to note that apart from customers' ability to possess internet data, some of the officials indicated that their mobile banking platform is only compatible with smartphones. Thus, customers subscribing to this form of e-banking service are required to have smartphone as stated below:

> *"Basically, all these applications run on smartphones like blackberry, android phones, unlike the usual 3310 Nokia phone. So customers must have a smartphone before using the platform"*
>
> *………EBO - 05*

This, therefore, shows that those customers without a smartphone will have to bear the indirect financial switching cost by getting a smartphone otherwise they cannot adopt the services. It was also pinpointed that banks that accommodate all types of mobile phones for their mobile banking services because they utilize a toll-free string enabled solution recently realized that customers that use a certain mobile network are being

charged for calling the toll-free line of their network. In view of this, one of the officials noted that:

> *"Our mobile banking is operated on string enabled solution where the customer needs to dial some number is toll free. But then recently, we notice that MTN (one of the telecommunication service providers) also have mobile payment solution and, of course part of their own strategy is to try as much as possible to get as many customers as possible on their own platform, so when you are using an MTN line to call you are being charged for the call ……..but it is free with other telecommunication service provider such as Glo; Etisalat etc. is free"*
>
> *……..EBO – 01*

The possession of internet data by individual bank customers was pointed at as a necessity to the adoption of certain platforms otherwise, customers are charged for such service if it is done for them at the branch. This point was confirmed by one of the interviewees who noted that:

> *"For the internet banking all you need to do is to have data from any of the telecommunication industry on your device……bank charges are removed if you do it in the comfort of your home, using your data"*
>
> *………EBO - 08*

From the foregoing, findings regarding the financial switching costs implication for individual bank customers to adopt e-banking reveal that both direct and indirect financial switching costs are necessary requirements for customers to e-banking adoption as indicated by the participatory officials. It is essential for customers to possess smart mobile phones for those banks that require customers to download mobile banking apps on their phones. Some banks do charge for a bank card. Customers are expected to make a private arrangement with internet services providers (ISP) for internet data services as well as pay mobile telecommunication networks for service charges incurred in the process of carrying out e-banking services.

6.6   CHAPTER CONCLUSION

In this chapter, the researcher has been able to reveal factors that may be responsible for the low level of e-banking adoption by individual bank customers in Nigeria from the point of view of the commercial banks operating in the country. In view of this, issues relating to the rationale for e-banking deployment by the participatory banks were explored. The scope of the e-banking products and services provided by these commercial banks were examined. The perception of banks regarding the risks associated with the adoption of e-banking products and services were investigated. The perception of participatory bank officials regarding the switching processes and the cost implication for e-banking adoption by individual banks were as well examined. Table 1.3 below shows a summary of key findings based on the various themes investigated.

Table 6.3: Summary of key findings

S/N	Themes	Key Findings
1	*Rationale for the deployment of e-banking services by participatory banks*	**Internal Factors** ❖ Reputation management ❖ Promotion of transparent banking services ❖ Focus on personalised banking services for high net-worth banks customers **External factor** ❖ Increased advocacy for banking automation ❖ Effect of the CBN consolidation policy
2	*The scope of available e-banking services to individual bank customers*	❖ Virtually all the participatory banks provide ATM, Mobile, Online and POS e-banking services ❖ None of the participatory banks offers telephone banking due to the lack of security of the platform
3	*Perception of risks associated with e-banking adoption*	**Regarding Banks (e-banking Service Providers)** ❖ Security of e-banking platforms ❖ Poor state of infrastructural facilities (electricity in particular) in Nigeria ❖ Possibility of having e-platforms malfunction ❖ General level of resistance to e-banking platforms **Regarding Individual Customers (e-banking service users)** ❖ High cost of reliable internet services ❖ Additional cost of alternate power supply ❖ Risk of losing login details ❖ Scepticism about the security and reliability of the e-banking platforms
4	*E-banking Switching Process and Costs Implications*	Participatory banks claimed to have minimised both procedural and relational switching costs because of the following strategies employed: **The Procedural Switching Costs** ❖ Quick switching processes to e-banking platforms

S/N	Themes	Key Findings
		The Relational Switching Costs ❖ recruitment of consultant to help customers with e-banking products and services ❖ Introduction of a multipurpose bank card ❖ Some banks accommodate of all kinds of mobile phones on mobile banking platforms ❖ Elimination of the third-party cost. **The financial switching costs** ❖ Both direct and indirect financial switching costs are necessary requirements for customers to adopt e-banking. ❖ It is essential for customers of certain banks to possess smart mobile phones to utilize their mobile banking. ❖ Some banks do charge for a bank card. ❖ Customers are expected make provision for internet data services and pay mobile telecommunication networks for service charges relating to e-banking services.

As noted in the chapter five of this study, researcher also conducted a survey research for individual bank customers of all the existing commercial banks in Nigeria. The survey was done parallel to the in-depth interviews in order to also investigate the perceptions of individual bank customers regarding the adoption of e-banking products and services. The perceptions of these customers about e-banking products and services were examined by using the 5 adoption innovation attributes as put forward by Rogers (1995). In addition to this, the perception of individual customers about the switching processes and the cost implication for e-banking adoption was also examined. The survey also evaluated the complementary assets that are available to individual banks customers that support e-banking channels more specifically the low patronised platforms. This survey was carried out in order to be able to substantiate the claims of the findings by comparing the findings of this approach with the findings of the in-depth interviews conducted before interpreting the results (Creswell, 2014). This will enable the understanding of factors that are responsible for the low patronage of e-banking platforms that are less adopted despite the efforts of the CBN and the commercial banks in Nigeria to increase patronage. The analysis of the survey research conducted is discussed in the next chapter.

CHAPTER SEVEN
DESCRIPTIVE STATISTICAL DATA ANALYSIS

7.0   INTRODUCTION

This part of data analysis entails the descriptive statistical data analysis of the quantitative data used for this study. The descriptive statistical data analysis helps to describe the essential features or the nature of the data (Trochim, 2006) obtained for this study of this. According to Trochim, descriptive statistics provide a simple summary of samples and measures and also serves as a base for most of the quantitative data analysis, showcasing data in a manageable form. To this effect, this section presents the description of data obtained through the questionnaire survey and has been structured by the researcher as follows: section 7.1 describes the demographic profile of the respondents. Section 7.2 presents respondents with banks accounts in Nigeria and the level of awareness of the e-banking platforms by those surveyed. Section 7.3 showcases complementary assets available to individual bank customers. Section 7.4 presents the perceptions of respondents regarding the five attributes of innovation as postulated by Rogers. Section 7.5 describes the perceptions of individual banks customers regarding the switching costs implication for e-banking adoption. Section 7.6 presents the perceptions of respondents about the scope of e-banking products and services provided by commercial banks in Nigeria e-banking and the complementary assets accessible to the research participants. Section 7.7 shows the level of adoption of the various e-banking platforms by the respondents while section 7.8 offers a summary, discussion of the results and conclusion.

7.1   DEMOGRAPHIC PROFILE OF THE RESPONDENTS

In this section, descriptions of the demographic characteristics of the respondents are presented. The proportion of each gender that participated will be presented followed

193

by the age categories of the respondents and lastly, educational status of the survey participants will also be discussed.

❖ *Gender of the Respondents:*

The analysis of the demographic profile of the respondents shows that a total of 389 males participated in the survey while the female participants were 297. This shows that 56.7% of the respondents are male while 43.3% of the total respondents are female. Table 7.1.1 below shows the gender of the participants.

Table 7.1.1: *Gender of the Respondents*

Category	Frequency	Percentage
Male	389	56.7
Female	297	43.3
Total	686	100

Source: Author generated based on field survey 2015

This finding indicated that a larger percentage of the respondents are male. This trend reflects the higher population ratio of males in the total population of Nigeria when compared to females as the available population estimates indicate more males in the population (World Population Review, 2016). Moreover, previous research revealed that more males are likely to have a formal bank account when compared to females. This is because women tend to use more of the alternative method such as community-saving groups unlike men (National Bureau of Statistics, 2011 & Oluwole, 2014).

❖ *Age of the Respondents:*

Also, the result of the data analysis shows that 41.4% of the total respondents are of the age category 18-30years. 30.2% of the respondents of age category 31-40years while those between the age group of 41-50years represent 17.6% of the total respondents. The final age category of the participants are those within the age bracket 51-65years, and this is estimated to be 10.8% of the total respondent. Table 7.1.2 below show the details of this findings

Table 7.1.2: *Age of the Respondents*

Category	Frequency	Percentage
18-30years	284	41.4
31-40years	207	30.2
41-50years	121	17.6
51-65years	74	10.8
Total	686	100

Source: Author generated based on field survey 2015

This result, therefore, revealed that a larger percentage of the respondents are youth within the first age bracket of 18-30years, followed by the second age bracket. This result is substantiated by the interview findings which revealed that the youths patronise e-banking more than old people (see section 6.2.4). Also, the National Bureau of Statistics, (2011) noted that prime-age adults are more likely to operate a bank account.

❖ ***Educational Status of the Respondents:***

Findings from the questionnaire survey revealed that 2% of the respondents have no formal education. 3.9% have primary school education. 15.7% of the participants have secondary school education while 78.3% have acquired a tertiary education. This result suggested those with higher education were more willing to take part in this study compared to other groups. Ayo, Adewoye and Oni (2010) study on the "State of e-banking implementation in Nigeria: a post-consolidation review" also reflected the trend of high participation of respondents with tertiary education.

Table 7.1.3: *Educational Status of the Respondents*

Category	Frequency	Percentage
No Formal Education	14	2.0
Primary School Education	27	3.9
Secondary School Education	108	15.7
Tertiary Education	537	78.3
Total	686	100

Source: Author generated based on field survey 2015

In summary, the analysis of the demographic characteristics of the respondents suggests that those within the age bracket of 18-30 years participated more in this research than any other age category. A larger number of the respondents have acquired formal education to the tertiary level. These demographic attributes of the respondents will offer insight into understanding the current e-banking adoption rate in Nigeria.

7.2 BANK ACCOUNT HOLDERS AND THE LEVEL OF AWARENESS OF THE E-BANKING PLATFORMS BY RESPONDENTS

❖ *Bank Account Holders:*

As stated in chapter five of this study, a total of 686 valid questionnaires were obtained from the research survey out of 950 questionnaires distributed. All the respondents are bank account holders in Nigeria as this is a prerequisite to filling the questionnaire, anyone that does not have a bank account in Nigeria, is not expected to participate in this research. The result of the data obtained from the survey which is presented in Table 7.2.1 below indicated the fulfilment of this criterion as all the respondents acknowledged that they have a bank account in Nigeria.

Table 7.2.1: *Bank Account Holders in Nigeria*

Responses	Frequency	Percentage
Yes	686	100

Source: Author generated based on field survey 2015.

❖ *The Level of Awareness of E-Banking Platforms:*

The result from the data analysis shows that a total number of 622 (i.e. 91.0%) of the total respondents are aware of all the five e-banking platforms that this study is based on. 5.0% are aware of four out of the five platforms, 3.0% are familiar with three of these platforms while 1.0% are only aware of two platforms. This result suggests that all the respondents are aware of a least two of the e-banking platforms and on the

average, all the survey participants are familiar with all the five e-banking platforms.
Table 7.2.2 below shows this finding.

Table 7.2.2: *The Level of Awareness of the E-Banking Platforms*

Responses	Frequency	Percentage
All the five platforms	622	91.0%
Four of the platforms	31	5.0%
Three of the platforms	24	3.0%
Two of the platforms	9	1.0%
One of the platforms	0	0.0
None of the platforms	0	0.0
Total	686	100

Source: Author generated based on field survey 2015.

This result indicates that participants are in a better position to contribute to this research by providing their perceptions regarding the adoption of these platforms.

7.3 COMPLEMENTARY ASSETS AVAILABLE TO INDIVIDUAL BANK CUSTOMERS

This section focuses on the various electronic devices that respondents have access to that supports e-banking services. Access to the internet by the participants will also be investigated.

❖ *Access to Electronic Devices*:

Teece (1986) noted identify the importance of complementary assets to e-banking adoption. This is because certain forms of e-banking services necessitate customers to possess some electronic devices that will serve as an enabling mechanism to fully adopt these e-banking products and services. This study, therefore, investigated the availability of such (e.g. the mobile phone, Laptops, desktop computer, etc.) devices to individual bank customers. Following the data analysis, it was revealed while some of the respondents have just one of the five devices listed in the questionnaire, some have access to more than one of these devices, and there are those who have access to all the

devices. The result of the data analysis showed that 1.2% of the participants have only a landline, 62.0% have only a mobile phone. One person has access only to an iPad, 1.5% of the participants have only the laptop while one participant has access to only a desktop computer. Also, it was also realised that 14 people have access to both mobile phone and iPad, 19.1% have access to both mobile phone and laptops. 6.1% have access to mobile, iPad & laptop. 1% have access to a landline, mobile phone, iPad & laptop. 19 persons have access to a mobile phone, iPad, laptop & desktop computer. 1.2% of the respondents have access to mobile, iPad & desktop computer. 1.3% persons have access to a mobile phone & desktop computer while 1.5% of the participants have access to all the five devices. Table 7.3.1 below presents further details of this result.

Table 7.3.1: *Access to Electronic Devices*

Category	Frequency	Percentage
Landline	8	1.2
Mobile Phone	425	62.0
IPad	1	0.1
Laptop	10	1.5
Desktop Computer	1	0.1
Mobile phone & iPad	14	2.0
Mobile phone & Laptop	131	19.1
Mobile, iPad & Laptop	42	6.1
Landline, mobile phone, iPad & Laptop	7	1.0
Mobile phone, iPad, Laptop & Desktop computer	19	2.8
Mobile, iPad & Desktop computer	8	1.2
Mobile & Desktop Computer	9	1.3
All devices	10	1.5
Total	685	100

Source: Author generated based on field survey 2015

A significant number of 425 of the respondents have access only to mobile phone as opposed other devices. This figure was followed by those who have access to both

mobile phone and laptop which takes a total number of 131 participants, and only 10 persons have all the devices. However, this result indicates that each of the respondent has at least one of the devices that supports e-banking platforms. Increased possession of mobile phones, laptops and iPads are substantial evidence of the availability of complementary assets where e-banking services are concerned. Based on this, one would expect a high adoption of e-banking platforms that utilises these devices such as; online banking, mobile banking and telephone banking. Moreover, some of the banks officials interviewed claimed that their mobile banking does not necessarily require a smartphone (see section 6.5.1.2). Therefore, customers without such phone have been provided options to carry out mobile banking transactions.

❖ **Internet Access:**

The internet is another key complementary asset needed by customers to access e-banking platforms systems such as the online banking service and in some instance; the mobile banking system. Therefore, as discussed in Chapter 4 of this study, the individual customer's access to internet service is regarded as vital to e-banking adoption. This analysis, reveals the level at which the participants access the internet. Findings indicated that 67.4% of 682 participants that responded have regular access to the internet, 13.8% sometimes access the internet while 18.8% of the respondent hardly or never access the internet. The table below shows the result obtained from the data analysis.

Table 7.3.2: *Internet Access*

Category	Frequency	Percentage
Very Often or often	460	67.4
Sometimes	94	13.8
Hardly or Never	128	18.8
Total	682	100

Source: Author generated based on field survey 2015

This finding suggests that a substantial proportion of the respondents have regular access to the internet. This is also expected to be a motivating factor to using e-banking platforms that require the internet for its adoption e.g. online banking.

7.4 PERCEPTIONS OF RESPONDENTS ABOUT THE FIVE INNOVATION ATTRIBUTES

This section has been structured to report explicitly a detailed analysis of each of the five innovation attributes postulated by Rogers; the theoretical framework adopted for this study.

1. Relative Advantage

This construct is intended to investigate the perception of the respondents regarding the advantage e-banking has over the manual banking services. This perception according to Rogers (2003) will influence adoption of a given innovation such as the e-banking services. Based on this, six items were used to measure this construct. These items examined the perception of respondents regarding the efficiency of the e-banking over manual banking, the convenience, time, the level of involvement or control respondents feel they have over their banking transactions. Results of each of these items are presented in Table 7.4.1 below:

Table 7.4.1:   *Relative Advantage of E-banking Services*

S/N	Items	Strongly Agree or Agree	Indifferent or No effect	Strongly Disagree or Disagree
1	E-banking is more efficient than manual banking	448 (65.4%)	59 (8.6%)	178 (26.0%)
2	E-banking is a convenient banking system	523 (76.5%)	40 (5.8%)	121 (17.7%)
3	I spend less time on banking transactions with e-banking	435 (63.7%)	99 (14.1%)	152 (22.3%)
4	E-banking gives me quick access to my bank account(s)	485 (70.6%)	92 (13.5%)	109 (16.0%)
5	E-banking allows me to manage my financial resources effectively	474 (69.3%)	145 (21.2%)	65 (9.5%)
6	E-banking gives me greater control over my Finance	294 (43.0%)	158 (23.1%)	232 (33.9%)

 Source: Author generated based on field survey (2015).

The result as presented in Table 7.4.1 above shows that on a general note, e-banking services were perceived to have a relative advantage over the manual banking system. The majority of the respondents strongly agree or agree with the claim that e-banking has a greater advantage over manual banking. The issue regarding the convenience it provides was rated above other factors/items as 76.5% of the participants noted that e-banking is a convenient banking system. This is then followed by the perception about the advantage e-banking has to giving quick access to respondents' bank account. A greater proportion of the respondents support the view that e-banking enables them to have sufficient control over their financial resources and that it is more efficiency. However, about 34% strongly disagree or disagree with the claim that e-banking gives greater control over their finance. This suggests that despite the wide acceptability of the advantage of e-banking over the traditional banking a substantial amount of the respondents still have reservation concerning the extent to which e-banking allows them to control their finance freely. This may influence the overall adoption of e-banking channels.

2. Compatibility

This construct is intended to investigate the perception of respondents concerning the compatibility of their lifestyle with e-banking products and services. Three items were used to measure this construct. The results are presented in Table 7.4.2 below.

Table 7.4.2: *Compatibility of E-banking Services*

S/N	Items	Strongly Agree or Agree	Indifferent or No effect	Strongly Disagree or Disagree
1	E-banking fits well with the way I carry out banking transaction	449 (65.9%)	90 (13.2%)	142 (20.9%)
2	E-banking is compatible with my lifestyle	434 (63.8%)	103 (15.1%)	143 (21.0%)
3	I like to try new technology	515 (75.6%)	94 (13.7%)	72 (10.6%)

Source: Author generated based on field survey (2015).

Findings regarding this construct show that a large percentage of the respondents perceive e-banking as compatible with their lifestyle. While 75.6% indicated that they like to try out new technology, 65.9% perceive e-banking to fit well with the way they carry out banking transactions and 63.85% are of the opinion that e-banking is compatible with their lifestyle. This result could be attributed to the fact that a significant number of the respondents have access to electronic devices and the internet (see section 7.2) as these are key complementary assets to carrying out e-banking transactions. Also, given that majority of the respondents have acquired tertiary education can as well be attributed to increased positive perception about the compatibility of this construct with respondents as previous research found educational status to have a direct influence on e-banking adoption in Nigeria (Izogo et.al. 012).

3. Complexity

This construct is intended to examine the perceptions of respondents regarding the complexity of e-banking products and services. Four items were used to test this construct. These items examined the perception of respondents about the mental effort required to adopt e-banking, perception associated with ease about e-banking usage and the perception about the ease of learning to use the various platforms. The results are presented in Table 7.4.3 below:

Table 7.4.3: *Complexity of E-banking Services*

S/N	Items	Strongly Agree or Agree	Indifferent or No effect	Strongly Disagree or Disagree
1	E-banking requires a lot of mental effort	362 (52.8%)	72 (10.5%)	252 (36.7%)
2	I believe it is easy to do my banking transactions through e-banking	440 (64.2%)	92 (13.4%)	153 (22.3%)
3	Overall, I believe that e-banking is easy to use	410 (59.9%)	95 (13.9%)	179 (26.2%)
4	Learning to make use of e-banking is easy for me	432 (63.1%)	79 (11.5%)	174 (25.4%)

Source: Author generated based on field survey (2015).

The result of this analysis indicates that majority of the respondent perceived e-banking as a non-complex alternate banking channels. Although, on the average, about a quarter of the respondents hold a contrary opinion, finding shows that over half of the participants strongly agree or agree to the claim that e-banking services facilitates easy banking transactions, it is easy to operate and also, the learning process is easy. Based on this result, it is therefore expected that e-banking adoption in Nigeria should be high. Chwelos, Benbasat, and Dexter (2001) are also in support of this view as they indicated that complexity has major impact on the intention to use an innovation.

4. Trialability

This construct is intended to explore the perception of respondents regarding their enablement to try out e-banking products and services. To this effect, two items were used to test this construct. These items investigate the perception of respondents the opportunities they have had to try out e-banking and their awareness of where these products are available for them to try out. The results are presented as follows:

Table 7.4.4: *Trialability of E-banking Services*

S/N	Items	Strongly Agree or Agree	Indifferent or No effect	Strongly Disagree or Disagree
1	I have had a great deal of opportunity to try various e-banking services	360 (52.6)	81 (11.8%)	244 (35.6%)
2	I know where I can go to satisfactorily try out various e-banking services	406 (59.3%)	98 (14.3%)	181 (26.4%)

Source: Author generated based on field survey (2015).

As indicated in table 7.4.4 above, a larger proportion of the respondents responded positively to this construct. This result substantiates the findings of Olatokun, and Igbinedion (2009), Eze et al., (2011) and Odumeru (2012) whose studies found respondents' perception of trialability as relevant to the adoption of e-banking channels. Based on this, it is therefore expected that e-banking adoption in Nigeria should be

substantially high.   However, the need for greater level awareness of e-banking platforms to enhance the perception of individual customers about trialability seems more evident. This is because over a quarter of the respondents still strongly disagree or disagree with the claim that they have had opportunity to try of these alternate banking channels or are aware of where they can have the opportunity to use try out these platforms.

5. Observability

This construct is intended to determine the perception of the survey respondents regarding their ability and opportunities they had to observe the operations of the various e-banking platforms. Three items were used to measure this construct.   The results are presented as follows:

Table 7.4.5: *Observability of E-banking Services*

S/N	Items	Strongly Agree or Agree	Indifferent or No effect	Strongly Disagree or Disagree
1	I have seen how others use e-banking services before using them	474 (69.2%)	79 (11.5%)	132 (19.3%)
2	I was influenced by what I observed as the benefits of using e-banking services	446 (65.1%)	89 (13.0%)	150 (21.9%)
3	With e-banking, I can see the effect of my banking transactions immediately	465 (67.9%)	96 (14.0%)	124 (18.1%)

Source: Author generated based on field survey (2015).

Findings showed that a substantial number of the respondents had previously observed others before they adopted this innovation as 69.2% of the participants had a privileged to observe other e-banking users before the adoption of e-banking services. 67.9% of the survey participants perceived have a positive perception of the immediate effect of their banking transactions as a result of e-banking services while 65.1% were influenced to adopting e-banking based on the benefits they observed concerning e-

204

banking products services. Worthy of note is that less than a quarter of the respondents hold a contrary view of this construct. Based on this result, one may expect that e-banking adoption in Nigeria should be on the increase. A previous study by Olatokun and Igbinedion (2009), on ATM adoption in Nigeria indicated that observability has the highest influence on the attitude of bank customers towards the patronage of this platform amongst other Rogers innovation attributes. Also, the investigation of this construct on mobile banking adoption in Saudi Arabia revealed a positive impact of the intention to patronise this platform (Al-Jabril and Sohail, 2012).

7.5 SUMMARY OF FINDINGS: RESPONDENTS' PERCEPTION OF FIVE ATTRIBUTES OF INNOVATION

In summary, it can be deduced from the descriptive analysis of Roger's innovation attributes that a significant number of the respondents have a positive perception regarding the five innovation attributes and as postulated by Rogers. However, these positive perceptions have not resulted in the adoption of innovation such as the e-banking platforms as postulated by Rogers (1995). Scholars such as Wang et al. (2012), and Bojuwon (2015) agreed to the inadequacy of Rogers' postulates in explaining/predicting the adoption of innovation such as the e-banking channels. Subsequent findings on this research study also substantiate this view (see section 7.7), this, therefore, necessitates the need to include other factors to the model (Bojuwon, 2015) to enhance the prediction of e-banking adoption in Nigeria. It is important at this juncture to note the empirical evidence which this study has shown regarding the limitations of Rogers' theory has also justified the fundament objective of this study which is to extend Rogers' model as a way of exploring the levels of adoption of e-banking platforms in Nigeria. Descriptive statistical analysis of the additional constructs (switching costs and complementary assets) are presented in the next two sections.

7.6 THE PERCEPTIONS OF INDIVIDUAL BANK CUSTOMERS REGARDING E-BANKING SWITCHING COSTS IMPLICATION

This section presents the results obtained from the analysis of the perception of respondents where e-banking switching costs are concerned. These switching costs (i.e. the procedural switching costs, the financial switching costs and the relational switching costs) which are based on Burnham et al., (2003) typology are presented in the following subsections:

7.6.1 Procedural Switching Costs: To evaluate this construct, three items were included in the survey questionnaire to measure this construct. These items examine the perceptions of respondents regarding possible charges associated with e-banking adoption, the time and effort to access information required to fully adopt e-banking. The results are presented in table 7.6.1 below.

Table 7.6.1: *Procedural Switching Costs*

S/N	Items	Strongly Agree or Agree	Indifferent or No effect	Strongly Disagree or Disagree
1	Switching to e-banking involves hidden charges	412 (60.1%)	110 (16.1%)	163 (23.8%)
2	It takes much time and effort to get the information needed to fully adopt e-banking	336 (49.2%)	105 (15.4%)	242 (35.4%)
3	Learning to use the services offered via e-banking takes time	303 (44.2%)	97 (14.2%)	285 (41.6%)

Source: Author generated based on field survey (2015)

The result of this analysis as presented in Table 7.5.1 above indicates that a larger percentage of the participants (60.1%) believe that switching from the manual/traditional system of banking to e-banking demands charges that are often not made public. This could have been an inhibitor to enhance the level of e-banking adoption. Although, respondents with the view that much time and effort is required to get the information needed to adopt e-banking fully is just slightly higher than those with the contrary view. It seems imperative for the existing commercial banks in

Nigeria and the CBN to address this issues by constantly enlightening individual bank customers on the processes involved in switching to e-banking. Also, it is important for banks to ensure that the time and effort required to switch is minimal. Furthermore, sensitising the customers will allay their fears and boost their positive perception of the short time it requires to learn how to use e-banking services as 44.2% of the respondents believe that it takes time to learn the services offered via e-banking.

7.6.2 *Financial switching costs:* Two items were incorporated into the survey questionnaire to measure this construct. These items focused on the perceived benefits that may be lost should a customer switch to e-banking and also the perceived upfront cost that will be expected of them. The results are presented as follows:

Table 7.6.2: *Financial switching costs:*

S/N	Items	Strongly Agree or Agree	Indifferent or No effect	Strongly Disagree or Disagree
1	I may lose the benefits of the manual banking system if I switch to e-banking	148 (21.6%)	174 (25.4%)	362 (52.9%)
2	Switching to e-banking involves some upfront costs	461 (67.3%)	91 (13.1%)	134 (19.6%)

Source: Author generated based on field survey (2015)

Based on the above result, it is evident that a larger percentage of the respondents (52.9%) did not perceive switching from the manual banking to e-banking as a loss of benefits, but rather the perception about some inherent switching costs serve as a stronger indicator to low/non-adoption of e-banking services. The result shows that 67.3% of the participants agree to the perception that switching to e-banking necessitates some upfront costs. Findings from the interview conducted for bank officials indicates that e-banking does not entail both direct and indirect switching costs (see section 6.5.1.3). This factor could therefore serve as a hindrance to increase adoption of e-banking platforms. Bases on this result, conscious efforts on the part of the banks and the governing authorities to minimise this switching cost are essential.

7.6.3 *Relational Switching Costs:* Two items were included in the questionnaire in order to test this construct on e-banking adoption in Nigeria. These items examined the perception of respondents regarding their interaction and the nature of their personal relationship with their bank officials. The findings are presented in table 7.6.3 below:

Table: 7.6.3: *Relational Switching Costs*

S/N	Items	Strongly Agree or Agree	Indifferent or No effect	Strongly Disagree or Disagree
1	I like a face to face interaction with my bank officials	271 (39.7%)	164 (24.0%)	247 (36.2%)
2	I have overtime enjoyed the personal relationship I have built with my bank officials	238 (34.7%)	188 (27.4%)	259 (37.7%)

Source: Author generated based on field survey (2015)

Following the result of this analysis, it is evident that a significant number of the respondents (39.7%) value the face to face interaction they have with their bank officials and as such individual bank customers may be reluctant to switching to e-banking where such interaction are usually unavailable. While it may be easy for those who strongly disagree or disagree and those who are indifferent with the claim that they have enjoyed the personal relationship they have built with their bank official overtime to adopt e-banking services, the opinion of others who agree with this claim should be taken into consideration as such people may find it challenging to give up such cost in an attempt to switch to e-banking services. Thus, inhibiting the increase in the level of adoption of e-banking channels despite the fact that e-banking was perceived to have a relative advantage over the manual banking system. On a general note, findings suggest that individual customers would rather prefer to bear the inconveniences and incur monetary cost so as to avoid relational switching costs in order to maintain their relationship with their bank official than to switch to e-banking.

7.7 THE SCOPE OF E-BANKING SERVICES AND THE COMPLEMENTARY ASSETS

This section of the report presents the results of the perceptions of respondents about the scope of the available e-banking products and services provided by commercial banks in Nigeria and the accessibility of e-banking complementary assets. Items under this construct evaluate the perceptions of respondents about the various supportive electronic devices to carry out e-banking banking, the affordability, scope and the availability of these assets to those surveyed. Table 7.7.1 below shows the summary findings.

Table 7.7.1: *The scope of the available products and services and the accessible e-banking complementary assets*

S/N	Construct	Strongly Agree or Agree (Frequency & %)	Indifferent or No effect (Frequency & %)	Strongly Disagree or Disagree (Frequency and %)
1	*Scope of available services:* The available e-banking services are useful for me	410 (59.8%)	72 (10.5%)	204 (29.7%)
2	I need many of the e-banking services	307 (44.8%)	79 (11.5%)	300 (43.7)
1	*Complementary assets:* I think I have devices to do e-banking.	450 (65.9%)	50 (7.3%)	183 (26.8%)
2	I do have access to internet facilities.	450 (65.9%)	47 (6.9%)	186 (27.2%)
3	Call rates to my bank customer service unit is high	234 (34.3%)	279 (40.8%)	170 (24.9%)
4	Customer service contact line is often not available	295 (43.0%)	271 (39.5%)	120 (17.5%)

Source: Author generated based on field survey (2015)

This finding as presented in Table 7.7.1 above shows that a significant percentage of the respondents have positive perception regarding their accessibility of the complementary assets that have been examined. Also, the majority of the survey participants agree with

the view that the various e-banking platforms are useful to them. The result also indicated that respondents are in support of the claim that they do need many of the e-banking services. However, a significant percentage of the respondents (43.7%) claim that they do not need many of the e-banking services. This, therefore, may have resulted in the disparity in the adoption of the available e-banking channels stated in chapter 4 of this study. This is because individual bank customers acknowledged on a general term that the available e-banking services are useful for them, but indicated that not all of these services are of need to them.

As far as the complementary assets are concerned, 65.9% of the participants indicates that they have the device to do e-banking and that they have access to the internet which are fundamental to e-banking adoption and thus, should enhance increased patronage of the e-banking platforms. However, 34.3% of the respondents claimed that the call rates to the bank customer service unit are high, this may limit the chances of switching to e-banking by such customers should they need to call their bank for help at the process of utilizing any of the e-banking channels especially in the event of emergency. Interview findings revealed that not all the banks have a toll-free customer helpline (see section 6.5.1.3). This increase in the financial burden as a result of the adoption of e-banking channels may pose a limit to further adoption of these platforms. Findings also suggested that 43.0% of the respondents who have managed to call the customer service line claimed that the line is not often available as opposed to the 17.5% who have a contrary opinion of this. This percentage might have served as a barrier to greater adoption of the e-banking platforms.

A further analysis of these two constructs was conducted in a bid to show if there is a relationship between the perceptions of the scope of e-banking services and available complementary assets. To establish this, the following hypotheses were generated:

H1: There is a relationship between the perceptions of individual bank customers about the scope of e-banking services and accessible complementary assets.

H0: There is no a relationship between the perceptions of individual bank customers about the scope of e-banking services and accessible complementary assets.

The result of this analysis which is presented in Table 7.7.2 below shows that the relationship between the perceptions of the survey participants about the scope of e-banking services and the accessible complementary assets was investigated using Spearman's rho correlation analysis. The result obtained from the analysis shows that there is a strong[11] significant positive relationship between the perceptions of the survey participants about the scope of e-banking services and the accessible e-banking complementary assets, $r = 0.536$, $n = 676$, $p <.001$, with high level of perceived scope of e-banking services associated with high levels of perceived accessible complementary assets.

Table 7.7.2: *Correlations analysis of the perceptions of the scope of available e-banking services and accessible complementary assets*

			Complementary Asset	Scope of Available E-banking Services
Spearman's rho	*Complementary Asset*	Correlation Coefficient	1.000	0.536**
		Sig. (2-tailed)	.	0.000
		N	678	676
Correlation Coefficient	*Scope of available e-banking services*		0.536**	1.000
		Sig. (2-tailed)	0.000	.
		N	676	684

**. Correlation is significant at the 0.01 level (2-tailed).

From the above analysis, the result shows that the null hypothesis (H0) is discarded while H1 is accepted. In summary, this section of data analysis indicates a positive relationship between the scope of the available products and services and the accessible e-banking complementary assets.

---

[11] Small r value = .10 to 0.29, medium/moderate r value = .30 to 0.49 and large/strong r value = .50 to 1.0 (Cohen, 1998)

7.8   THE LEVELS OF ADOPTION OF THE E-BANKING PLATFORMS

This section of the data analysis shows the level adoption of the various e-banking platforms by the respondents as well as the platform that survey participants have used for their highest level of banking transaction. The first part of this section (subsection 7.7.1) will present findings on the level of adoption of the various e-banking platforms while the second part of the section (subsection 7.7.2) shows the e-banking platform used for the highest banking transaction.

7.8.1   *The levels of adoption of the various e-banking platforms*

1. ATM Adoption – Following the data analysis, findings show that 75.0% of the respondents frequently use the ATM. 13.4% of the survey participants acknowledged that they occasionally use the ATM while 11.5% hardly or have never used the ATM. Details of this findings are presented in Table 7.8.1 below.

Table 7.8.1: *ATM level of patronage*

Category	Frequency	Percentage (%)
Very Often or often	514	75.0%
Sometimes	92	13.4%
Hardly or Never	79	11.5%
Total	685	100

Source: Author generated based on field survey (2015)

This finding shows that significant percentage of the respondents use the ATM frequently. This result is in line with the stance of scholars such as Adepoju, Babalola and Onyeabor, (2011) & Asiegbu, Nwakanma and Etus (2015) also indicated in their study that ATM is the most patronized platform. Further exploration of the level of ATM adoption revealed that participants have various reasons for this high level of patronage reasons. These reasons have been categorised by the researcher into three major sub-headings: (1) Reasons for patronage and (2) Reasons for minimal patronage

and (3) Reasons for non-patronage. These three categorizations are subsequently used for the other types of e-banking platforms in proceeding sub-sections.

Reasons for ATM frequent patronage: Based on the findings from the survey, it was noted that 78% of the people that further specify their reasons for the adoption of this platform indicated that ATM is a better system of banking as compared to the manual banking and other e-banking platforms. Based on the responses, better banking system is defined in terms of the following:

- *Relative Advantage* – 30% of the participants who acknowledged ATM as a better system of banking based their evaluation on the relative advantage it possesses over the manual traditional banking system and other e-banking platforms. As far as these respondents are concerned, ATM is a comfortable system of banking, it is convenient, and it is not stressful. It is safer than the manual banking and the ATM card can be used on other ATMs of other banks.

- *Complexity* – Furthermore, 21% of the responded who noted ATM as a better banking system based their assessment on the non-complex nature of the platform. According to these people, ATM is easy to use and gives quick access to cash. It was also noted that the use of ATM eliminated the difficult issue of irregular signature. In the traditional banking customers are expected to always provide the same signature to complete any financial transactions. Transactions are debarred where irregularity of signature occur. The advent of the ATM eliminates this issue as customers are only asked to provide their Personal Identification Number (PIN). Thus, simplifying the ambiguity of irregular signature.

- *Compatibility* – Customers that prefer to pay their bills electronically find ATM as compatible to their lifestyle and as such as they have adopted this platform

more frequently. 11% of those that pointed ATM as a better system of banking made this claim based on the compatibility of the platform with their way of life. According to these people, apart from the bill payment option that ATM affords, mobile phones top ups is what these customers often do and ATM also helps them to achieve this. Also, customers who travel abroad finds ATM compatible with their lifestyle because they will not have to travel with huge cash, their ATM card (master card) can be used abroad.

❖ *Financial Switching Cost* – The CBN cash policy as noted in chapter 4 of this study mandated customers to utilise the ATM for withdrawals less than a hundred thousand naira (N100, 000.00) otherwise charged apply if done over the counter. Therefore, 16% of the respondents that perceived ATM as a better system of banking based this claim on the premise that ATM help them enjoy a minimal financial switching costs since over the counter charges is eliminated.

Reasons for ATM minimal patronage: The result of this analysis revealed that 4% of the participants that further specify their reasons for the adoption of the ATM indicated that their patronage is minimal because they believe ATM is a less effective and a less efficient system of baking due to the following factors:

❖ *Minimal Relative Advantage* – 2% of the respondents in this category are of the opinion that ATM has a minimal advantage over the manual system of banking. According to these people, on many occasions, customers still have to be in a long queue to utilize this platform. Long queues have been regarded as a peculiar feature of the tradition banking. Therefore, if that will still be experienced to use ATM, they noted that it of less advantage and cannot be regarded as very effective and efficient thus, leading to their minimal patronage of this platform.

❖ *Non-Compatibility* – Non-compatibility with the lifecycle of the respondent in this category emerged as another factor that hinders the frequent usage of the ATM. 2% of the respondents in this category claimed that their patronage of the ATM is quite minimal because they hardly have the need to withdraw cash. The platform according to them is used for emergency purposes only. Enlightenment on the various other benefits (such as bill payment, mobile phone top –ups, account balance inquiries, etc.) of the ATM apart from the general notion that it is a cash machine needs to be reiterated by banks in Nigeria.

Reasons for ATM non-patronage – The result of this analysis indicates that 18% of the respondents that further noted their reasons for their non-adoption of the ATM are of the opinion that the platform is a non-compatible and a non-useful system of banking.

❖ *Lack of Perceived Relative Advantage* – 6% of the respondents in this category have not adopted the ATM because they do not perceive ATM as a better platform when compared to the traditional system of banking. The lack of total security of this platform has made them prefer manual banking to the use of ATM. They noted that cloning of ATM cards and loss of PIN to fraudster would not be a concern to them as long as they restrain themselves from the adoption of this platform.

❖ *Non-Compatibility* – It is also worthy of note that 4% of the respondents in this category will not patronise ATM because they have not acquired formal education and as such cannot operate the machine on their own. While some indicated that they don't like the platform, a few stated that ATM adoption facilitates impulse buying, therefore conflicting with their saving culture. Thus, in order to preserve this saving culture, they have refrained from adopting the platform.

❖ *Observability* – Observing the challenges and difficulties faced by those who have adopted this platform have hindered 4% of respondents in this category from adopting the ATM. Observing ATM service users not been able to utilise the platform because of network problem and insufficient fund in the machine has debarred them from patronising this platform. These people would rather prefer to maintain the operation of the manual banking. It is imperative for banks to minimise this issue of network problem and insufficient funds in the ATM machine so as to facilitate the adoption of this platform by customers and potential customers who may be dissuaded from ATM patronage as a result of these factors.

❖ *Avoidance of the Financial Switching Cost* – 1% of the respondents who claimed minimal usage of the ATM because it is seen as a less effective and less efficient banking innovation supports this claim with the view that the adoption of the ATM incurs service charges, and this has debarred them from utilizing the platform in a bid to avoid this procedural switching costs.

❖ *The Scope of Service* – 3% of the respondents in the category of non-adoption claimed that the scope of the ATM services are not useful for them.

Table 7.8.2 below presents a summary of the various reasons frequent patronage, the minimal and also reasons for non-patronage of the ATM platform.

Table 7.8.2: *Reasons for ATM levels of adoption*

Frequent Patronage	Frequency & %	Minimal Patronage	Frequency & %	Non-Patronage	Frequency & %
Better Banking Innovation:	378 (78%):	Less effective and efficient banking innovation:	27 (5%):	Non-compatible and non-useful banking innovation:	85 (17%):
a.) Relative advantage	147 (30%)	a.) Minimal Relative Advantage	10 (2%)	a) Negative perception of the Relative Advantage	27 (6 %|)
b.) Complexity	102 (21%)	b.) Less Compatibility	12 (2%)	b.) Non-Compatibility	22 (4%)

c.) Compatibility	53 (11%)			b.) Observability Negative perception	18 (4%)
d.)Financial switching Cost	76 (16%)			c.) Financial switching cost	5 (1%)
				d.). Irrelevant Scope of service	13 (3%)

Source: Author generated based on field survey (2015)

2. POS Adoption - As far the adoption of POS is concerned, findings revealed that 18.6% of the respondents use the POS frequently, 26.2% sometimes or occasionally use it while 55.2% hardly or have never used it. This, as shown in Table 7.8.3 below suggests that a larger number of the participants hardly or have never used the POS.

Table 7.8.3: *POS level of patronage*

Category	Frequency	Percentage (%)
Very Often or often	127	18.6
Sometimes	179	26.2
Hardly or Never	377	55.2
Total	683	100

Source: Author generated based on field survey (2015)

A further investigation of the reasons specified by the respondents as factors responsible for their level of patronage has also been classified by the researcher under three main sub-headings. The first one identifies reasons for the frequent patronage of the platform, the second sub-headings outlines reasons for minimal patronage while the third one has to do with reasons for non-patronage of the POS.

Reasons for frequent POS patronage: On a general note, 29% of those who specify reasons for their frequent adoption of this platform, indicated that it is a better banking innovation in terms of the following factors:

❖ *Relative Advantage* - Respondents noted that smaller denominations needed for change is often a concern for both customers and retail business owners and as a result, prices of goods and services are rounded up to the nearest whole number.

217

Therefore, making use of the POS has enabled the payment of the exact price for goods and services without having to worry about sourcing for change or in many cases having to let go of petty changes. Also, the use of POS was regarded as convenient, easy and safe compared to having to make a cash payment. Regular access to POS terminals was also indicated as an added advantage to its frequent use. These factors have enabled 24% of the respondents who perceived POS as a better banking innovation to use the platform frequently.

❖ *Compatibility* – 8% of the respondents that perceived POS as a better banking innovation see the platform as compatible with their daily activities. This platform supports and facilitates a prompt and regular purchase of goods and services without been burdened with heavy cash.

Reasons for POS minimal patronage: Following the analysis of the data obtained regarding the reasons specified by respondents for minimal patronage of the POS, 46% of the respondents who indicated reasons for the adoption level noted that the platform is less effective and efficient due to the following factors:

❖ *Minimal Relative Advantage* – Machine error that sometimes leads to double deduction of payment has made the regular use of this platform minimal. Also, difficult experienced in reserving payment when occasion demands have equally hindered the frequent use of this platform. These factors have made 14% of the people in this category to withdraw from regular use of the POS has it is regarded as inefficient and at a disadvantaged over cash transactions.

❖ *Non-Compatibility* – Respondents in this category indicate that the preference for cash by many business owners makes the frequent usage of impossible in as

much as they prefer this option. Some noted that the availability of POS enhances spontaneous spending thus, serve as a hindrance their saving culture. Therefore, POS is seen as the last resort. And amongst those who feel comfortable to use this platform, they noted that the platform is hardly available for their regular use.

❖ *Complementary Assets* – 5% of respondents in this category attributed their minimal patronage of this platform to poor internet network which results in bad network connection problem. Based on this, minimal patronage occurs.

❖ *Financial Switching Cost* – 10% of the respondents that specified reasons for the minimal patronage of this platform noted that they had minimised the patronage of the POS because of the charges this platform incurs per transaction.

Reasons for POS non-patronage – 22% of the respondents who specified reasons for their level of adoption of the POS pointed that they have not patronize the platform because it is regarded as non-compatible and a non-useful banking innovation. Their views have been classified under two main sub-headings as follows:

❖ *Compatibility* – 12% of survey participants under this category have not patronised this electronic platform because they find it not aligning with their preferences, a few of these people indicated that they do not like this method and therefore will not use it.

❖ *The Scope of service* – 10% of the respondents in this category indicated that they have not used this platform because the nature of this service is not needed by them as they prefer to use ATM to make withdrawals and then use cash for

their financial transactions. Table 7.8.4 below presents the summary of these findings:

Table 7.8.4: *Reasons for POS levels of adoption*

Frequent Patronage	Frequency & %	Minimal Patronage	Frequency & %	Non-Patronage	Frequency & %
Better banking innovation:	**104 (32%):**	**Less effective and efficient banking innovation:**	**152 (46%):**	**Non-compatible and non-useful banking innovation:**	**73 (22%):**
Relative Advantage	79 (24%)	Minimal Relative Advantage	48 (14%)	Non-compatibility	40 (12%)
Compatibility	25 (8%)	Less-compatibility	56 (17%)	Irrelevant Scope of available service	33 (10%)
		Inadequate-complementary Assets	16 (5%)		
		Financial switching Cost	32 (10%)		

Source: Author generated based on field survey (2015)

3. Online Banking Adoption - As regards the adoption rate of the online banking platform, 16.5% of the respondents use this channel frequently, 15.8% of the people surveyed sometimes use this platform while 67.6% hardly or have never used medium of e-banking. This result is presented in table 7.8.5 below.

Table 7.8.5: *Online banking level of patronage*

Category	Frequency	Percentage (%)
Very Often or often	113	16.5
Sometimes	108	15.8
Hardly or Never	462	67.6
Total	683	100

Source: Author generated based on field survey (2015)

This finding showed that a significant number of the participants hardly or have never used the online banking system. Reasons specified by respondents for this level of patronage are discussed below.

Reasons for frequent online banking patronage: The very few percentage of the respondent that make use of the online banking platform do so because they perceive it

220

as a better innovation. 39% of those who indicated the reasons for this level of patronage noted that their frequent use of this platform is due to the following factors:

Relative Advantage – 11% of respondents in this category are of the opinion that online banking is convenient and comfortable and that it has an added advantage when compared to the manual system of banking.

Compatibility – The remaining 28% of the respondents in this category use the platform often because it is compatible with their business payment arrangement as they can make foreign purchases. Some of the people also noted that online banking affords them the opportunity to check their account banks and make interbank money transfers as often as their personal businesses demands.

Reasons for minimal online banking patronage: 4% of the respondents indicated their reasons for the minimal patronage of this platform. The innovation according to them is less effective and efficient based on the following factors:

  ❖ *Non-Compatibility* – 3% of the people in this category indicated that online banking is not compatible with the choice of banking transactions as they only use it in times of emergencies

  ❖ *Financial Switching Cost* – Involvement of hidden charges was pointed as the reason why the remaining 1% of people in this category patronise this platform less frequently.

Reasons for online banking non-patronage – 56% of those who indicated their reasons for the level of patronage of this platform based their evaluation on the following factors:

  ❖ *Lack of Perceived Relative Advantage* – 52% of the people in this category have a negative perception of the performance of this platform, they are of the opinion that the platform is inefficient, unreliable, waste time, stressful and that

it is susceptible to fraud. These reasons have hindered them from showing any interest in the patronage of this platform. As they believe it does not have a better advantage over the manual banking platform.

❖ *Non-Compatibility* – Respondents with a frugal approach to spending found the patronage of online banking as a catalyst to increase irrational spending. This category of the respondents constitutes 3% of the people in this category and according to them, their preference for over the counter and ATM withdrawals as these platform does not give them instance assess to their cash at the comfort of their home. It will therefore, involve a conscious and well planned action before money is taken from their account.

❖ *Lack of complementary Assets* – A very few fraction of the respondents in this category has not patronised online banking because they do not have a suitable device. Summary of these findings are outlined in table 7.8.6 below

Table 7.8.6: *Reasons for Online banking levels of adoption*

Frequent Patronage	Frequency & %	Minimal Patronage	Frequency & %	Non-Patronage	Frequency & %
Better system of banking:	**109 (39%):**	**Less effective and efficient system of banking:**	**12(4%):**	**Non-compatible and non-useful system of banking**	**162 (56%):**
Relative Advantage	31 (11%)	Less-compatibility	9 (3%)	Negative perception of the Relative Advantage	147 (52%)
Compatibility	78 (28%)	Financial switching Cost	3 (1%)	3 (1%)	10 (3%)
				Lack of Complementary Assets	5 (1%)

Source: Author generated based on field survey (2015)

4. Mobile Banking Adoption: Finding on the mobile banking adoption shows that 8.4% of the respondents use the mobile banking platform frequently. 15.1% of the participants occasionally use the mobile banking platform while 76.5% of the people surveyed hardly or have never used the mobile banking. This result shows that a very

significant proportion of the respondents hardly use or have never used this form of e-banking services. A detail report of this finding is presented in Table 7.8.7 below:

Table 7.8.7: *Mobile Banking levels of patronage*

Category	Frequency	Percentage (%)
Very Often or often	57	8.4
Sometimes	102	15.1
Hardly or Never	518	76.5
Total	677	100

Source: Author generated based on field survey (2015)

Reasons specified by respondents for this level of patronage are discussed below.

Reasons for frequent mobile banking patronage: The result of this analysis suggests that 29% of those respondents that specified their reasons for adoption stated that they use the platform frequently because they see it as a better banking innovation with regards to the following factors:

- ❖ *Relative Advantage* – 14% of the respondents who frequently use this platform and stated their reason for such level of patronage pointed that the platform is comfortable, convenient and saves the stress of visiting the bank.

- ❖ *Compatibility* - 5% of respondents in this category are those who used to making the payment for their bills electronically. Therefore, they adopt this platform frequently because it gives them this option.

- ❖ *Complexity* – simple access to balance inquiries and simplified method of mobile phone top-ups with the aid of mobile banking are the reasons stated by 10% of the respondents who perceived mobile banking as a better innovation banking platform.

Reasons for minimal mobile banking patronage: Minimal patronage of this platform due to the perception of the 23% of research participants who indicated their specific reasons for patronage is on a general note based on their assessment of the platform as

less effective and efficient banking innovation has been characterised under the following sub-headings:

- ❖ *Minimal Perception of the Relative Advantage* – 6% of these respondents did not see mobile banking as a better alternative banking channel when compared to the traditional banking system because they claimed that is unreliable and can be very frustrating. Therefore, they only use the platform occasionally.

- ❖ *Non-Compatibility* – 3% of the respondents in this category would hardly use this platform because it is not compatible with their preferred choice of e-banking system.

- ❖ *Unavailable Complementary Assets* – lack of frequent access to mobile banking complementary assets such as suitable mobile phones and internet access has minimised the patronage level of 7% of the respondents who indicate their reason for the minimal patronage of this platform.

- ❖ *Financial switching costs* – The perception that charges are incurred when this platform is patronised has minimised the level of adoption of this e-banking platform. 4% of the respondent who indicated their reasons for the level of adoption pinpointed this factor.

- ❖ *The Scope of service* – Limited scope of service that can be performed via this channel was also noted as a basis for minimal patronage. Some of the respondents stated that mobile banking has the same function as the internet banking. 3% of the respondents who reported their reasons for this level of adoption constitutes this percentage.

Reasons for mobile banking non-patronage: A larger percentage (48%) of the respondents who indicated their reasons for non-patronage of this platform believe that the platform is not compatible with their banking style and also that it is not a useful banking innovation. These perceptions are based on the following factors:

* *Lack of Perceived Relative Advantage:* 19% out of the respondents in this category do not like this e-channel because they do not perceive mobile banking as a better innovation. Some of these respondents claimed that it is not a popular platform in the country. As a result, it cannot be regarded as a better alternative.

* *Complexity* – 4% of the respondents who indicated their reasons for their level of patronage stated that they would not use the platform because they are of the opinion that it is hard to understand the processes and the mode of operation of this platform.

* *Trialability* – 17% of those who indicated their reasons for the non-patronage of this platform did not patronise it because they have not had the opportunity to try it and as such do not know how it works. Some indicated that they would have patronised it if their banks had taught them how to use it.

* *The Scope of service*: Lack of awareness of this type of e-banking services has not facilitated their interest in this platform. 8% of the respondents indicated this factor as their reasons for the non-patronage of this the mobile banking. Summary of these findings are presented in table 7.8.8 below:

Table 7.8.8: *Reasons for mobile banking level of adoption*

Frequent Patronage	Frequency & %	Minimal Patronage	Frequency & %	Non-Patronage	Frequency & %
Better system of banking:	**61 (29%):**	**Less effective and efficient system of banking:**	**46 (23%):**	**Non-compatible and non-useful system of banking**	**83 (48%):**
Relative advantage	30 (14%)	Minimal Relative advantage	12 (6%)	Negative perception of the Relative advantage	39 (19%)
Compatibility	10 (5%)	Less-compatibility	6 (3%)	Complexity	9 (4%)

Complexity	21 (10%)	Inadequate Complementary Assets	14 (7%)	Trialability	36 (17%)
		Financial Switching Costs	8 (4%)	Irrelevant scope of service	16 (8%)
		Minimal relevance of the Scope of service	6 (3%)		

Source: Author generated based on field survey (2015)

5. Telephone Adoption: Finally, the result of the analysis of the level of adoption of telephone banking which is the last form of e-banking platform this study focuses on shows that a tiny percentage of the respondents (4.4%) are of the opinion that they frequently use the telephone banking services. 11.2% of the participants claimed to use the platform sometimes while 84.4% acknowledged that they hardly or have never used the telephone banking. Details of this finding are shown in Table 7.8.9 below.

Table 7.8.9: *Telephone banking level of patronage*

Category	Frequency	Percentage (%)
Very Often or often	30	4.4
Sometimes	76	11.2
Hardly or Never	574	84.4
Total	680	100

Source: Author generated based on field survey (2015)

This result suggests that a major percentage of the participant hardly or have never used the telephone banking. Further investigations on the reasons for this level of patronage are discussed as follow:

Reasons for frequent telephone banking patronage: 42% of the respondents who specified their reasons for patronising this platform noted that it is a better banking innovation because of the following factors:

❖ *Relative Advantage* - 19% people of respondents who believe telephone banking is a better banking innovation based their evaluation on the advantage of calling

their banks to make inquiries. This according to these respondents has saved them the stress of visiting their bank.

❖ *Compatibility* – 29% of the remaining respondents in this category of frequent users of this platform finds telephone banking compatible to their lifestyle as they can maintain frequent contact with their banks over the phone as demanded by their personal business.

Reasons for minimal telephone banking patronage: Those who indicated a minimal patronage of this platform noted that they see the platform as less efficient and effective banking innovation. 6% of the respondent who reported their reason for the level of patronage constitutes this category and their specific reasons for minimal patronage are as follows:

❖ *Negative Perception of the Relative Advantage* – The entire respondents in this category stated that their minimal level of patronage is based on the lack of efficiency of this platform. They indicated that contact telephone lines of their bank can be busy or unavailable and this reason according to them does not make the platform better. Thus, visiting the branch to make inquiries are on many occasions the best option.

Reasons for telephone non-patronage: A significant percentage (52%) of the participants who have never used this platform indicated reasons that showcase that the platform is not compatible them coupled with the opinion that the platform is not of use to them. These conclusions are based on the following factors:

❖ *Minimal Perception of the Relative Advantage* – The level of security of this platform was identified as a major hindrance to their patronage of this e-channel. This category of customers which constitutes 9% of those who

indicated the reasons for their level of adoption feel that the security of the platform cannot be guaranteed as such they have refrained from its use.

❖ *Trialability* – 16% of the respondents in this category claimed that they have not had the opportunity to try out the platform. They claimed that they are not even aware of its existence and they have no idea of how it works.

❖ *Complementary Assets* - 5% of the respondents argued that they do not have a good phone to use for such purpose, and this has made them not to try the option of telephone banking.

❖ *The scope of service* - The nature of services which this platform offers is unclear to 22% of the respondents who responded to reasons for non-patronage of the platform. Based on this reason, such customers stated that they don't think they need such service and therefore prefer the use of ATM and manual banking. Table 7.9.10 below shows a brief summary of the reasons for telephone banking level of adoption.

Table 7.9.10: *Reasons for telephone banking level of adoption*

Frequent Patronage	Frequency & %	Minimal Patronage	Frequency & %	Non-Patronage	Frequency & %
Better system of banking:	**59 (42%):**	**Less effective and efficient system of banking:**	**8 (6%):**	**Non-compatible and non-useful system of banking**	**73 (52%):**
Relative advantage	19 (13%)	Minimal Relative advantage	8 (6%)	Negative perception of the Relative advantage	13 (9%)
Compatibility	40 (29%)			Trialability	22 (16%)
				Lack of complementary assets	7 (5%)
				Irrelevant Scope of service	31 (22%)

Source: Author generated based on field survey (2015)

228

Based on this result, it is evident that respondents that claim to use the platform have a different perception of what telephone banking entails. They simplified telephone banking to only calling the bank to make inquiries. In essence, this substantiates the findings of the interviews presented in section 6.2 which indicated that commercial banks in Nigeria do not currently provide this service due to security lapses.

7.8.2 *E-banking platform used for highest banking transaction*

Further finding regarding the platform used by respondents for the highest banking transaction revealed that 86.4% of the respondents used the ATM to carry out their highest banking transaction. 1.6% of the participants used POS, 4% used online banking, and 0.7% used mobile banking. In addition to this, 0.4% claim to have used the telephone banking while 6.8% of the total respondents surveyed used neither of these platforms for their highest banking transactions. Details of the results are presented in figure 7.7.1 below. This finding aligns with the study of Okechi and Kepeghom (2013) who carried out an empirical evaluation of e-banking patronage among customers in Nigeria and also found ATM as the most patronised e-banking platform in Nigeria.

Figure 7.7.1: Platform used for highest banking transaction

- ATM - 86.4%
- POS - 1.6%
- Online - 4%
- Mobile - 0.7%
- Telephone - 0.4%
- None - 6.8%
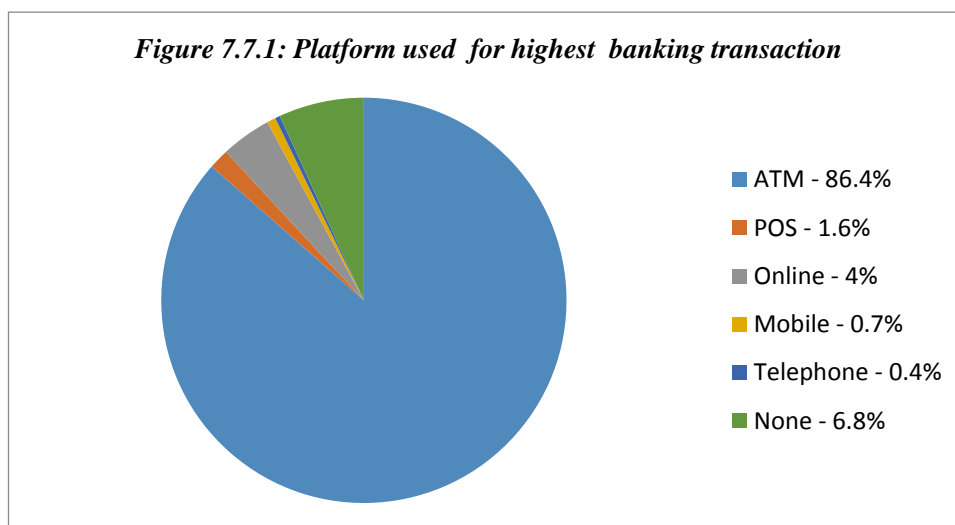
Source: Author generated based on field survey (2015)

This result shows that ATM is the platform most adopted in this regard. The result on the level of e-banking patronage as illustrated in figure 7.7.2 below also confirms the claim that ATM is the most patronised e-banking platform based on the value of banking transactions. Worthy of note is the fact that, there are still some people that have not used any of the platforms.

Figure 7.7.2: Levels of adoption of e-banking platsforms by respondents (%)
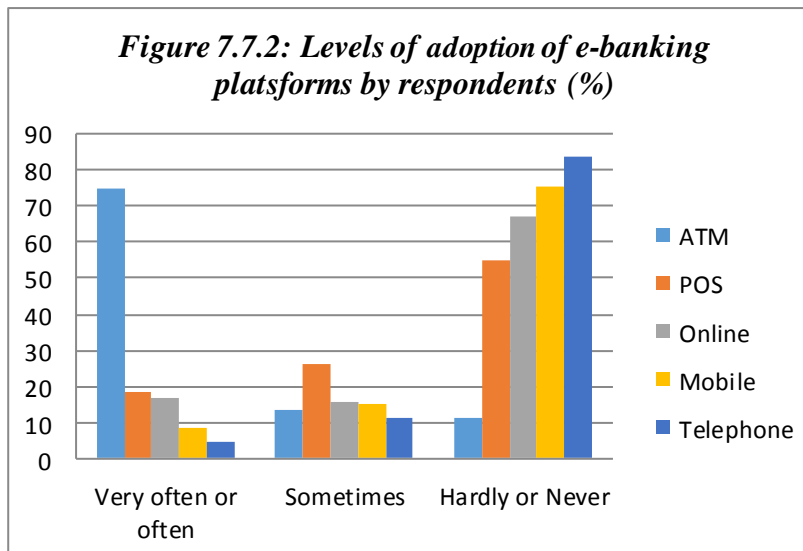
In summary, findings from this section about the levels of adoption of the various e-banking services indicated that ATM is still the most patronised platform. It can be deduced that the levels of adoption of online and the mobile banking by the respondents are quite minimal while very few telephone banking users have only been able to us the platform for very simple services. Participants have adopted more of the ATM followed by the POS.

This shows that there is still a high preference for cash based transactions as opposed to the adoption of electronic channels despite the introduction of the cash policy by the CBN about 8 years ago (Agu, Simon and Onwuka, 2016).

Findings also suggest that respondents attributed various reasons to this level of patronage. On a general note, frequent patronage was as a result of customers' positive

perception of the platforms as a better banking innovation. Specifically, relative advantage and compatibility emerged as common reasons for frequent patronage among all the platforms.

Reasons for minimal and non-patronage of the platforms were based on customer perceptions of the level of effectiveness and efficiency of these banking innovations as well as the issue of non-compatibility of these technologies with the lifestyles of individual bank customers. Also, the negative perceptions about the usefulness of the various e-banking services emerged as key determinant of e-banking levels of patronage. Table 7.8.11 below presents the summary of the levels of patronage as specified by the respondents who indicated theirs reasons

Table 7.8.11: *Summary - Specified reasons for the levels of patronage*

Levels of patronage	ATM	POS	Online Banking	Mobile Banking	Telephone Banking
Frequent Patronage (better banking innovation)	Relative advantage	Relative advantage	Relative advantage	Relative advantage	Relative advantage
	Compatibility	Compatibility	Compatibility	Compatibility	Compatibility
	Complexity	-	-	Complexity	-
	Less Financial Switching Costs	-	-	-	-
Minimal Patronage (Less effective and efficient system of banking)	Minimal Relative advantage	Minimal Relative advantage	-	Minimal Relative advantage	Minimal Relative advantage
	Less-compatibility	-	Less-compatibility	Less-compatibility	-
	-	Inadequate-complementary Assets	-	Inadequate Complementary Assets	-
	-	Financial switching Cost	Financial switching Cost	Financial Switching Costs	-
		-	-	Minimal relevance of Scope of service	-
Non-Patronage (Non-compatible and non-useful system of banking)	Negative Perception of the relative advantage	-	Negative perception of the Relative Advantage	Negative perception of the Relative advantage	Negative perception of the Relative advantage
	Non-compatibility	Non-compatibility	-	Complexity	-
	Negative perception of Observability	-	-	-	-
				Trialability	Trialability

Levels of patronage	ATM	POS	Online Banking	Mobile Banking	Telephone Banking
	Procedural switching costs	-	-	-	-
	-	-	Lack of Complementary Assets	-	Lack of Complementary Assets
	Irrelevant scope of service	Irrelevant Scope of available service		Irrelevant scope of service	Irrelevant scope of service

Source: Author generated based on field survey (2015)

7.9   CHAPTER SUMMARY AND CONCLUSIONS

In this section, the researcher set out to carry a descriptive analyse of the data obtained from the survey in a bid to describe the essential features of this study. Based on this objective, a descriptive analysis of the general profile of the respondents was carried out. The result revealed that a larger percentage of the respondents are male and the majority of the survey participants are within the age bracket 18-30years. It was also observed that greater proportion of the respondents (78.2%) are educated up to the tertiary level which is expected to impact positively on their understanding of this study (i.e. the general level of their awareness of the various platforms). Furthermore, all the respondents have a bank account in Nigeria, and 90.5% of the respondents are aware of all the five e-banking services this study investigates. Therefore, the results obtained about their perceptions of these e-banking services can be regarded substantial for this research.

Findings also revealed that all the participants have access to at least one form of the electronic device that supports e-banking and a larger percentage of the respondents have access to the internet. Furthermore, the majority of the participants perceived e-banking as useful banking channels and they acknowledged that they have access to associated complementary assets. Further analysis showed a positive and strong relationship between respondents' perception of the accessible complementary assets and their perceptions of the scope of the various e-banking products and services. These

factors are usually expected to facilitate e-banking adoption. However, ATM remains the most patronised e-banking products and services.

The next chapter: Chapter 8 presents the analysis and findings of the relationships between e-banking adoption in Nigeria by individual bank customers and the extended model of the DIT.

CHAPTER EIGHT
EXPLORING RELATIONSHIPS: E-BANKING ADOPTION AND THE EXTENDED MODEL OF ROGERS' INNOVATION ATTRIBUTES

8.0   INTRODUCTION

A descriptive analysis and findings of individual bank customers' perception of the extended model of the DIT (i.e. each of the five construct of Rogers' innovation attributes and the cost variables) have been presented in the previous chapter of this study (Chapter 7). In this chapter, the relationship between this model and the level of adoption of each of the electronic platforms (i.e. ATM, POS, Online, Mobile and Telephone Banking) will be explored. As stated in chapter 5, ordinal regression modelling has been utilised to analyse the level of significance of each of the constructs in the extended model as a means of predicting e-banking adoption in Nigeria.

This chapter is divided into four sections. Section.8.1 highlights each of the dependent variables (electronic platforms) and the independent (explanatory variables). The preliminary tests and findings of the analysis of the extended model of Rogers' innovation constructs are presented in section 8.2. In section 8.3, the ordinal regression results of the relationship between the adoption of each of the e-banking platforms and the perception of individual bank customers based upon extended model of Rogers's innovation attributes is presented, while section 8.4 offers a summary and discussion of the results and conclusions.

8.1: The Dependent and the Independent Variables

- ❖ **The dependent variables**: In order to examine the adoption levels of the e-banking platforms, each of the platforms was individually analysed in relation to the perception of individual bank customers about the extended model of Rogers. Therefore, a total of five dependent variables were considered in this study. These are as follows:
    - i.   The levels of adoption of the ATM
    - ii.   The levels of adoption of the POS

iii. The levels of adoption of the online banking

iv. The levels of adoption of the mobile banking

v. The levels of adoption of the telephone banking

The levels of adoption were measured on a 5 point Likert scale: 1 = Never, 2 = Hardly, 3 = Sometimes, 4 = Often and 5 = Very Often

❖ **The independent variables (Extended Rogers' constructs)**: Ten ordinal variables make up the extended model of Rogers' construct which are classified as explanatory covariates (variables). These have been grouped into three categories as follows: The first category (A) entails the Rogers' five innovation attributes; category B consists of the three switching costs variables and the third category (C) has one construct on the scope of available e-banking services, and one construct on the complementary assets available to individual customer. All of these were measured on a 5 point Likert scale: 1 = strongly disagree; 2 = disagree; 3 = no effect; 4= agree; 5= strongly agree. Table 8.1 below describes each of these constructs in detail.

Table: 8.1: *Details of each construct of the independent variables*

Category	Construct	Code	Description of measured item
A: *Rogers Innovation Attributes*	Relative Advantage	RADVT	The perception of individual bank customers regarding advantage of e-banking over traditional/manual banking
	Compatibility	COMPT	The perception of individual bank customers relating to the compatibility of e-banking with their lifestyle
	Complexity	COMPLX	The perception of individual bank customers regarding the complex nature of e-banking
	Trialability	TRAL	The perception of individual bank customers regarding their ability to try out e-banking products and services
	Observability	OBSERV	Individual bank customers' observations regarding e-banking services
B: *Switching Costs*	Procedural Switching Costs	PROCOST	The perception of individual bank customers regarding the loss of time and efforts required to switching to adopting e-banking
	Financial	FINCOST	The perception of individual bank customers

Category	Construct	Code	Description of measured item
	switching costs		regarding the quantifiable financial resources required to adopting e-banking
	Relational Switching costs	RLNCOST	The perception regarding the psychological and the emotion losses bank customers may experience when they switch from the old traditional banking system to the e-banking system
C: *Scope of Service and Complementary Assets*	Scope of the available e-banking services	USSRVC	The perception of individual customers regarding the scope of e-banking services
	E-banking complementary Assets	COMP-ASST	The perception of individual bank customers regarding e-banking complementary assets available to individual customers

Source: Author-generated based on field survey, 2015

In addition to these explanatory covariates, three socio-demographic confounding variables[12] were also included in the analysis, namely, gender, age and educational status. These are described in Table 8.2 below.

Table 8.2: *Socio-demographic Variables*

Variable	Category
A: *Gender*	*Male*
	Female
B: *Age*	*18 – 30years*
	31 – 40years
	41 – 50years
	51 – 65years
C: *Educational Status*	No formal education
	Primary education
	Secondary education
	Tertiary education

8.2   PRELIMINARY TESTS

Construct Validity: In order to establish that all the explanatory variables have accurately measured the intended variable as specified by Davies & Hughes, (2014), correlation analysis and factor analyses were carried out to test the validity of each of the constructs. The results of these analyses as shown in tables 8.3, 8.4 and 8.5 below

---

[12] Variable that have effects or correlates both cause and the outcome (Frank, 2000)

were satisfactory. Statistically, spearman rank correlations of all pairings were significant at less than 1% probability (p-value < 0.001)

Table 8.3: *Spearman's rho correlations matrix among the explanatory variables*
*(*CATEGORY A)

CONSTRUCT		RADVT	COMPT	COMPLX	TRAL	OBSERV
RADVT						
	Correlation coefficient	1.000	0.631**	0.488**	0.336**	0.502**
	Sig. (2-tailed)	.	0.000	0.000	0.000	0.000
	N	686	686	686	686	686
COMPT						
	Correlation coefficient	0.631**	1.000	0.465**	0.444**	0.529**
	Sig. (2-tailed)	0.000	.	0.000	0.000	0.000
	N	686	686	686	686	686
COMPLX						
	Correlation coefficient	0.488**	0.465**	1.000	0.492**	0.514**
	Sig. (2-tailed)	0.000	0.000	.	0.000	0.000
	N	686	686	686	686	686
TRAL						
	Correlation coefficient	0.336**	0.444**	0.492**	1.000	0.646**
	Sig. (2-tailed)	0.000	0.000	0.000	.	0.000
	N	686	686	686	686	686
OBSERV						
	Correlation coefficient	0.502**	0.529**	0.514**	0.646**	1.000
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	.
	N	686	686	686	686	686

**. Correlation is significant at the 0.01 level (2-tailed)

Table 8.4: *Spearman's rho correlations matrix among the explanatory variables*
(CATEGORY B)

CONSTRUCT		PROCOST	FINCOST	RLNCOST
PROCOST				
	Correlation coefficient	1.000	0.502**	0.271**
	Sig. (2-tailed)	.	0.000	0.000
	N	686	686	686
FINCOST				
	Correlation coefficient	0.502**	1.000	0.369**
	Sig. (2-tailed)	0.000	.	0.000
	N	686	686	686
RLNCOST				
	Correlation coefficient	0.271**	0.369**	1.000
	Sig. (2-tailed)	0.000	0.000	.
	N	686	686	686

**. Correlation is significant at the 0.01 level (2-tailed).

Table 8.5: *Spearman's rho correlations matrix among the explanatory variables*

(CATEGORY C)

CONSTRUCT		COMP-ASST	USSRVC
COMP-ASST			
	Correlation coefficient	1.000	0.535**
	Sig. (2-tailed)		0.000
	N	686	686
USSRVC			
	Correlation coefficient	0.535**	1.000
	Sig. (2-tailed)	0.000	.
	N	686	686

**. Correlation is significant at the 0.01 level (2-tailed).

As for the factor analysis carried out to test construct validity, results show that all items have measured the specified construct given that the Eigenvalues were above one and the KMO values obtained for this analysis ranges between 0.5; the minimum acceptable value and 0.8 which is regarded as adequate value for this type of analysis (Field, 2005) The chi-square values of these Bartlett's test of sphericity for all the items were all significant. Table 8.6 below shows detail of the factor analysis output.

Table 8.6: *Factor Analysis Output*

Construct	Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy	df	Bartlett's Test of Sphericity (χ^2 value)	Eigenvalues
Relative Advantage	0.865	15	.000	4.179
Compatibility	0.689	3	.000	2.393
Complexity	0.800	6	.000	2.875
Trialability	0.500	1	.000	1.721
Observability	0.648	3	.000	2.149
Procedural Switching Costs	0.674	3	.000	2.155
Financial Switching Costs	0.500	1	.000	1.203
Relational Switching Costs	0.500	1	.000	1.727
Scope of service	0.500	1	.000	1.707
Complementary Assets	0.592	6	.000	2.182

Reliability Test: Also, as discussed in Chapter 7, Cronbach's alpha was used to test the internal reliability of these constructs. The results indicate that the instrument used to measure the indicators is reliable and consistent (see Table 8.7 below). The minimum value obtained for each of the constructs is higher than the 0.70 which was specified as the generally acceptable value (Pikkarainen et al, 2004; Gerber and Fin, 2005 & Bryman 2016).

Table 8.7: *Cronbach's Alpha Reliability Tests*

Construct	Cronbach's alpha value	Number of items
Rogers innovation attributes	0.916	18
Switching costs	0.784	7
Service scope and complementary assets	0.815	6
E-banking adoption level	0.784	5

Further to this, the result of the analysis of the item-total correlation indicates that all the items except item number 10 (under the first construct: the Rogers' innovation attributes) exceeded the minimum threshold of 0.3 which is required for this item to be regarded as relevant to the construct i.e. having a significant contribution to the item measured (Nunnally and Bernstein, 1994 & Field, 2013). Therefore, this item was discarded from further analysis. It is important to note that after item 10 was dropped, the Cronbach's alpha value of items in this construct increased from 0.916 to 0.936. It was also observed that the item-total correlation value of 13 items increased. While three of the items retained their old values, item 2 decreased slightly (see tables 8.8 and table 8.9 below). This suggests that discarding item 10 will enhance the results of subsequent analysis.

Table 8.8: *New Cronbach's Alpha Value after Item 10 was discarded*

Construct	Cronbach's alpha value	Number of items
Rogers innovation attributes	0.936**	17
Switching costs	0.784	7
Service scope and complementary assets	0.815	6
E-banking adoption level	0.784	5

** Increase in the Cronbach's alpha value after discarding item 10

Table 8.9: *Differences in Item-Total Correlation Value after Item 10 was Discarded*

Construct	Item Number	Item-total correlation	NEW Item-total correlation
Rogers innovation attributes	Item 1	0.603	.605
	Item 2	0.691	.691*
	Item 3	0.713	.715**
	Item 4	0.719	.722**
	Item 5	0.660	.659**
	Item 6	0.609	.603**
	Item 7	0.742	.748**
	Item 8	0.723	.732**
	Item 9	0.590	.603**
	Item 10	-0.360[a]	-
	Item 11	0.698	714
	Item 12	0.673	.691**
	Item 13	0.705	.725**
	Item 14	0.574	.587**
	Item 15	0.534	.536**
	Item 16	0.470	.466
	Item 17	0.651	.661**
	Item 18	0.714	.722**

Construct	Item Number	Item-total correlation	NEW Item-total correlation
Switching costs	Item 1	0.445	Value Unchanged
	Item 2	0.624	
	Item 3	0.670	
	Item 4	0.555	
	Item 5	0.334	
	Item 6	0.510	
	Item 7	0.423	
Service scope and complementary assets	Item 1	0.699	Value Unchanged
	Item 2	0.618	
	Item 3	0.718	
	Item 4	0.666	
	Item 5	0.386	
	Item 6	0.373	
E-banking adoption level	Item 1	0.306	Value Unchanged
	Item 2	0.596	
	Item 3	0.652	
	Item 4	0.545	
	Item 5	0.308	

** Increase in the new item-total correlation value after discarding item 10

 * Decrease in the new item-total correlation value after discarding item 10

8.3 ORDINAL REGRESSION RESULTS: THE LEVELS OF ADOPTION OF E-BANKING PLATFORMS AND THE EXTENDED MODEL OF THE DIT

In this section, the results of the regression analysis of each of the e-banking platforms i.e. the ATM. POS, online banking, mobile banking and telephone banking on the explanatory variables specified in Table 8.1 and the socio-demographic variables shown in Table 8.2 are presented. The second fundamental purpose of this study (in addition to the comparative study of the e-banking starting points in both the UK and Nigeria previously discussed in chapter 3 of this study) is to examine if the extended Rogers's model (i.e. relative advantage, compatibility, complexity, trialability, observability, procedural switching costs, financial switching costs, relational switching costs, scope of the available e-banking services and e-banking complementary assets) can provide an appropriate model that can predict the levels of adoption of the various platforms of e-banking in Nigeria. Based on this objective, ordinal regression analysis was carried out. The results of this analyses are presented in the following subsections.

8.3.1 ATM LEVELS OF ADOPTION AND THE EXTENDED MODEL OF THE DIT

Figure 8.1 below shows the level of adoption of the ATM. Most individuals in the sample have adopted the ATM technology. Those within the group "very often and often" constitute nearly 76% of the sample, thus revealing a positively skewed distribution.

Figure 8.1: ATM levels of adoption
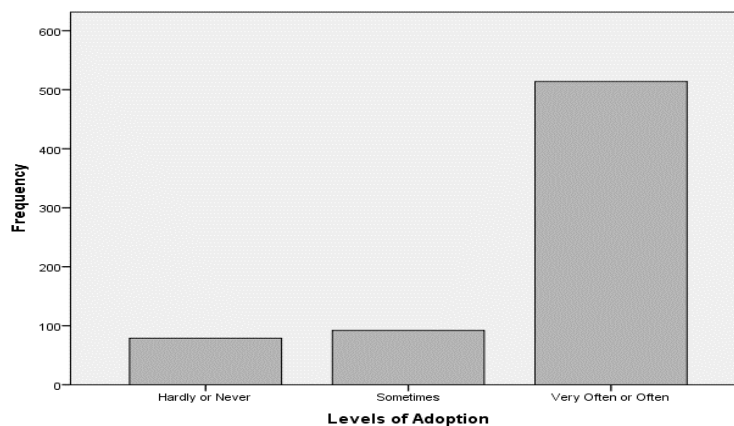
Socio-Demographic Attributes of Respondents: ATM

Table 8.10 below shows the demographic attributes of the respondents in relation to the levels of ATM adoption.

Table 8.10: *Summary of the cases (ATM)*

Variables	Responses	N	%
ATM Adoption Level	Hardly or Never	77	11.9
	Sometimes	82	12.7
	Very often or often	489	75.5
Gender	Male	369	56.9
	Female	279	43.1
Age	18 – 30years	263	40.6
	31 – 40years	198	30.6
	41 – 50years	114	17.6
	51 – 65years	73	11.3
Educational Status	No formal education	14	2.2
	Primary education	26	4.0
	Secondary education	105	16.2
	Tertiary education	503	77.6

Furthermore, the summary of cases also suggests that males are more likely to adopt this platform (56.9%) compared with females (43.1%). Respondents in the age category 18-30years constitute the highest proportion of users of this platform (i.e. 40.6% of the total respondents that use this platform) followed by those in the age category 31–40years which constitutes 30.6% of ATM users. Those in the age category 51 – 65years, were observed to be the least likely to use this platform as they constitute only a total number of 11.3% of users. This suggests that the adoption of this platform is dependent on age. This result is consistent with the findings of Olatokun and Igbinedion (2009) who noted similar gender and age bias based on their research on ATM adoption in Nigeria.

The analysis of the educational status of the respondents reveals that 77.6% of the ATM users have obtained a tertiary education, 16.2% with secondary education, 4.0% with primary education and 2.2% with no formal education. This finding also suggests that the level of education of the respondents has strong relevance to the adoption of the ATM. This evidence is substantiated by the research findings of scholars such as Oyeleye, Sanni and Shittu (2015). These scholars also established in this sequence a relationship between ATM adoption and respondents' educational status.

Ordinal Regression Result (ATM)

In order to establish the relationship between the dependent variable (ATM adoption) and the explanatory variables, ordinal regression analysis was carried out. The results are presented as follows:

❖ *Goodness of fit:*

Information regarding the fitness of this model helps to determine the effect of each explanatory variable (variables in the extended DIT model) included in the model and as such the outcome indicates whether the model improves the ability

242

to predict ATM levels of adoption by comparing the model without any explanatory variable (i.e. the intercept only) with a model that includes all explanatory variables (i.e. the final model). The result is expected to indicate if the final model has significantly improved the fitness of the data (Norusis, 2005). The results of this analyses presented in Table 8.11 below show a significant improvement in the intercept only model given a significant Chi-square value with P-value that is < 0.01.

- ❖ **Pseudo *R*-square**:

This value indicates the approximate proportion of the variance that the explanatory variables can explain, suggesting whether the dependent variable can be successfully predicted from the independent variable (Nagelkerke, 1991). Although what constitutes a good and acceptable pseudo R-square value varies across areas of application, the Nagelkerke R-square value of this analysis indicates that the model explains about 40.2% of the variation relating to the adoption of the ATM among the respondents. In an example analysis included in the IBM package of the SPSS version 21, a Nagelkerke R-square value of 32.8% is regarded as respectable. In addition, Adeola-Omole (2013), described a lower Nagelkerke R-square value of 27% which was obtained in a similar study as useful variance in predicting the outcome of one of the variables investigated. Based on this argument, it can be concluded that the Nagelkerke R-square value obtained for this analysis is respectable and the model is useful for predicting ATM adoption.

❖ *Parameter Estimates:*

Table 8.11 below shows the result of the predictive ability of each of the explanatory variables:

Table 8.11: *Parameter Estimates – ATM Adoption*

Construct	Estimates	Wald	Df	Sig.
RADVT	.014	.548	1	.459
COMPT	.109	8.401	1	.004*
COMPLX	-.017	.239	1	.625
TRAL	-.018	.113	1	.737
OBSERV	.197	22.778	1	< .001*
PROCOST	-.018	.119	1	.730
FINCOST	-.091	1.005	1	.316
RLNCOST	.030	.193	1	.660
COMP-ASST	-.009	.031	1	.861
USSRVC	-.080	1.245	1	.264
GENDER: Male	.344	4.086	1	.043*
Female	0[a]	.	0	.
AGE: 18-30years	.416	2.196	1	.138
31 – 40years	.559	4.691	1	.030*
41 – 50years	.471	3.728	1	.054
50 – 65years	0[a]	.	0	.
EDUCATION: No formal Education	-1.368	12.141	1	< .001*
Primary Education	-1.029	10.593	1	.001*
Secondary Education	-.481	4.309	1	.038*
Tertiary Education	0[a]	.	0	.
**Test of parallel line χ^2 = **6.497 (df = 17, p - value = 0.989)				
Final Model χ^2 (Compared with Intercept only model) = 238.737 (df = 17; p-value < 0.001)				
Nagelkerke R-square = 0.402				
Link function: Complementary Log-log.				
% of Correctly Predicted Adopters (those indicating "sometimes" + "very often or often") = 84.6				

[a] = Reference category. * Significant construct at a 5% level of probability. **The Test of parallel lines in this model is not statistically significant with p-value at 0.989. This suggests that the model is valid for all categories of ATM Adoption.

Following the result of this analysis, COMPT and OBSERV are the only two constructs within the Rogers' extended model that significantly predict ATM adoption. The

perceptions of individual bank customers about the relative advantage of the ATM over the face-to-face banking did not emerge as a significant predictor of greater adoption of this platform. The non-significance of this innovation attribute could be due to the CBN regulatory framework that mandated the use of this platform (see section 6.2.3) otherwise customers will be liable to pay transaction charges if such transaction is carried out over the counter (see section 4.5). The CBN stipulations may have undermined the positive perception of the relative advantage on increased patronage of this innovation technology as postulated by Rogers.

Complexity and Trialability also did not emerge as significant predictors of ATM levels of patronage. Although, customers have positive perceptions of these two constructs as indicated in section 7.4, the impact of the cash policy may also have weakened the significance of these two constructs in predicting greater adoption in the same vein as relative advantage. Compliance with the CBN policy in a bid to avoid penalties seem to be more important.

None of the "cost variables" in the extended model emerged as significant predictor of ATM levels of adoption. The insignificance of the cost variables aligns with the findings from the interviews presented in section 6.5. For instance, interviewees noted that to adopt ATM platform is relatively free. The procedural costs have been eliminated as it takes few minutes to obtain ATM card. The fact that bank cards are produced at the branch has also minimised procedural costs. Furthermore, interviewees indicated that the ATM cards are given to customers free, no charges attached, thus, eliminating the financial switching costs of ATM adoption. Unlike other e-banking platforms that necessitate customers to have access to or provide complementary assets such as the Internet or electronic device, customers do not require any of such to patronise ATM. The associated complementary assets with the e-platform are the sole

responsibility of the service provider (i.e. the banks). They ensure that the machine is connected to reliable internet service and is adequately powered by electricity. Therefore, it is justifiable that none of the cost variables emerged as a significant predictor of increased ATM patronage. OBSERV is the most significant construct followed by COMPT. This suggests that enhanced level of adoption is predicted by customers' ability to observe others use this platform and these observations have created a positive perception about the adoption of this alternate banking channel. Worthy of note is that Olatokun and Igbinedion (2009) using Rogers diffusion of innovation theory also found OBSER as the most important attribute that significantly influence ATM adoption in Nigeria. As indicated in section 1.0, about 34% of Nigerians are not formally educated as such observing other customers use the ATM platform could predicts increased patronage.

Also, COMPT which is the second variable that emerged as a significant predictor of the ATM corroborates one of the interview findings (see section 6.2.3). Interviews conducted revealed that ATM supports the cash oriented nature of the society. Nigerians are so used to cash transactions and ATM is the only e-platform that gives customers access to physical cash unlike other e-banking channels. Since this norm of handling physical cash by an average Nigeria is still predominant, it is therefore, not surprising that COMPT emerged as a significant predictor of this platform. Moreover, previous findings such as Olatokun and Igbinedion (2009) also indicated COMPT as a significant variable that influence ATM adoption. Furthermore, the three socio-demographic variables: GENDER, AGE and EDUCATION are also significant factors that predict ATM adoption. Findings show that males are significantly more likely to adopt ATM than females. This result can be substantiated with the report of the Vanguard Newspaper (2010), and the assertion of Oluwole (2014) that Nigerian

business (market) women are more comfortable with the traditional daily savings contribution among their fellow business colleague than operating a bank account. This is because such savings groups are void of any rigorous process, and no formal documentation of personal details or requirement for any legal means of identification. This association is solely based on trust. Therefore, having more males predicted as major adopters of the ATM could be attributed to the existence of this norm particularly among the market women. Moreover, scholars such as Odumeru (2012) found GENDER to have a direct effect on e-banking adoption in Nigeria.

Findings also reveal that those in the age category "31-40" have the most propensity to adopt ATM followed by those in the age category "41-50" which is barely significant. These results demonstrate a true reflection of the active working age population in the country (see figure 1.1) as those who are gainfully employed and have a source of income are within this age category. The prediction of higher ATM adoption for this prime age could be attributed to the fact that they are the active population in the country characterised with strive for livelihood and as such may often demand the use of this e-banking platform. This claim can also be supported by the outcome of the interviews conducted for this study (see section 6.2.4). Interviewees noted that those who are relatively young prefer to use the ATM compared to the very old bank customers.

Also, the linear effect of education is evident in this finding, the size of coefficients is negatively increasing as education level decreases from the reference category. This suggested that the greater the level of education, the higher the level of patronage of this platform, as those with lower educational status may be reluctant to adopt this e-banking platform. It is worthy of note that while Izogo et.al (2012) found AGE and EDUCATIONAL STATUS as a core influence on ATM adoption in Nigeria, Oyeleye,

Sanni and Shittu (2015) emphasised that the educational status of customers has a direct effect of e-banking adoption thus, substantiating the findings of this study.

Based on the findings of this study, a model that can further enhance the adoption of ATM in Nigeria has been developed. This is presented in figure 8.2 below.

Figure 8.2: *ATM Adoption Model*
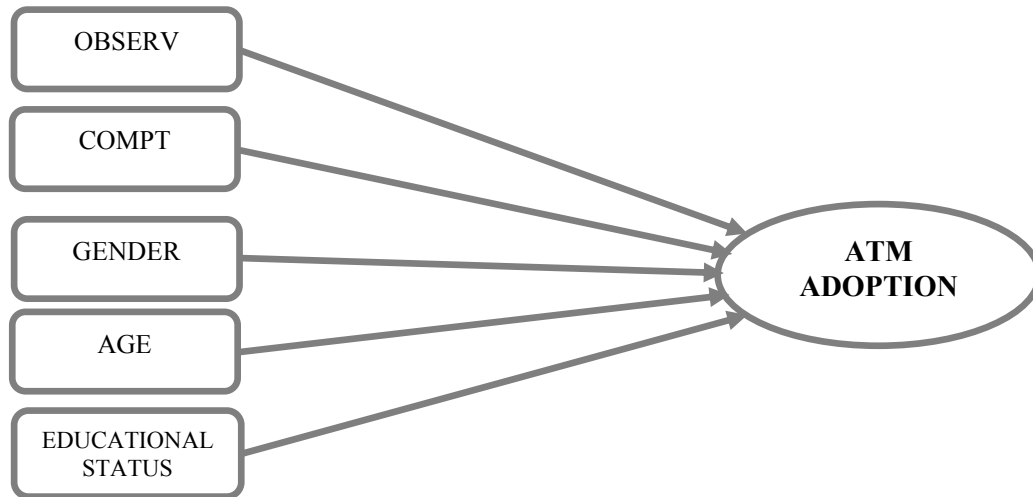
Source: Author generated based on the research findings

8.3.2 POS LEVELS OF ADOPTION AND THE EXTENDED MODEL OF THE DIT

Figure 8.3 below shows the levels of adoption of the POS. Most individuals in the sample have hardly or never adopted the POS platform. Those within the group "hardly and never" constitute about 55% of the sample, thus revealing a negatively skewed distribution.

Figure 8.3: *POS levels of adoption*
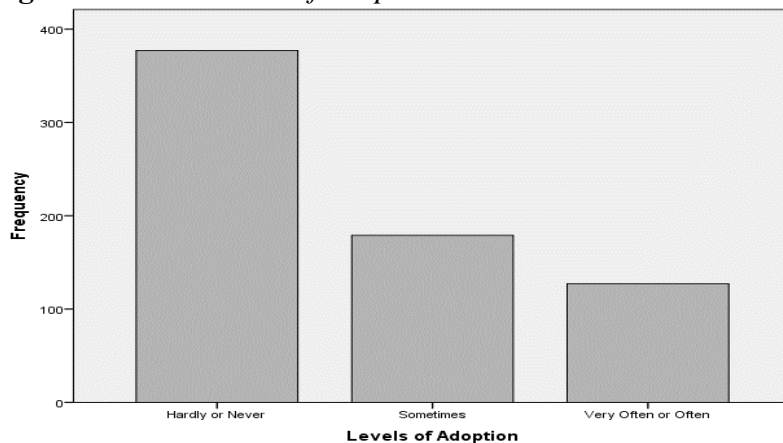
Socio-Demographic Attributes of Respondents: POS

Table 8.12 below presents the socio-demographic attributes of the respondents in relation to the levels of POS adoption

Table 8.12: *Summary of cases (POS)*

Variables	Responses	N	%
POS Adoption Level	Hardly or Never	354	54.8
	Sometimes	168	26.0
	Very often or often	124	19.2
Gender	Male	369	57.1
	Female	277	42.9
Age	18 – 30years	262	40.6
	31 – 40years	196	30.3
	41 – 50years	115	17.8
	51 – 65years	73	11.3
Educational Status	No formal education	13	2.0
	Primary education	26	4.0
	Secondary education	106	16.4
	Tertiary education	501	77.6

As presented in Table 8.12 above, POS adoption in Nigeria as at the time this study was conducted is much lower compared to the ATM. Respondents who have never or hardly use the POS constitute over half of the total sample size. While 26.0% sometimes use this platform, a minimal percentage of 19.2% use the platform very often or often. This, indicates an inverse relationship between ATM adoption and the POS platform. This low level of adoption is supported by a previous study conducted by AG Partnerships (2015) on POS adoption and usage in Lagos State, Nigeria as finding from this research suggested that a very few percentage of consumers are willing to use POS as a payment option despite the fact that 61.9% of the merchants surveyed provided this service.

Ordinal Regression Results (POS)

In order to establish the relationship between the POS levels of adoption and the explanatory variables, ordinal regression analysis was carried out. The results are presented as follows:

❖ *Goodness of fit:*

The finding of this analysis presented in Table 8.13 below shows that the explanatory variables included in this analysis improve the ability of the model to predict the adoption of POS. The resulting p –value reveals that the final model has significantly improved the fitness of the data given that the p-value is less than 0.05 level of significance.

❖ **Pseudo *R*-square**:

Nagelkerke R-square value shows that 34% of the proportion of the variance of POS adoption can be explained by the explanatory variables used for this analysis. This value as noted earlier in section 8.3.1 is respectable and is useful for predicting POS levels of adoption.

❖ *Parameter Estimates:*

Table 8.13 below shows the result of the predictive ability of each of the independent variables (the predictors)

Table 8.13: *Parameter Estimates - POS Adoption*

Construct	Estimates	Wald	df	Sig.
RADVT	.009	.424	1	.515
COMPT	.102	9.176	1	.002*
COMPLX	-.004	.016	1	.898
TRAL	.132	10.740	1	.001*
OBSERV	.012	.122	1	.727
PROCOST	-.132	17.060	1	< .001*
FINCOST	.051	.733	1	.392
RLNCOST	-.074	2.665	1	.103

Construct	Estimates	Wald	df	Sig.
COMP-ASST	-.054	2.161	1	.142
USSRVC	-.019	.141	1	.707
GENDER: Male	.429	10.789	1	.001*
Female	0ᵃ	.	0	.
AGE: 18-30years	.289	1.136	1	.287
31 – 40years	.359	1.732	1	.188
41 – 50years	.088	.085	1	.770
50 – 65years	0ᵃ	.	0	.
EDUCATION: Less than Tertiary Education***	-.858	12.448	.	< .001*
Tertiary Education	0ᵃ	.	0	.

**Test of parallel line χ² = 25.393 (df = 15, p value = 0.063)
Final Model χ² (Compared with Intercept only model) = 221.831 (df = 15; p -value < 0.001)
Nagelkerke R-square = 0.336
Link function: Negative log-log
% of Correctly Predicted Adopters (those indicating "sometimes" + "very often or often") = 28.1

ᵃ ⁼ Reference category. * Significant construct at a 5% level of probability. **The Test of parallel lines in this model is not statistically significant with p-value at 0.063. This suggests that the model is valid for all categories of POS adoption.   *** No adoption within the "No education", "Primary Education", and "Secondary Education" so all adopters in these category were amalgamated.

This result indicates that five constructs significantly predicts POS adoption in Nigeria. These are COMPT, TRAL, PROCOST, GENDER and EDUCATIONAL STATUS. While previous research on POS adoption in Nigeria such as: Adeoti and Osotimehin, (2012), Adeoti, (2013) and AG Partnership, 2015 have only been able to identify factors such as service speed, security concern and low level of awareness of the benefits that the platform, deployment of the platform to "unstructured market etc., finding from this study has revealed COMPT, TRAL, PROCOST, GENDER and EDUCATIONAL STATUS as crucial to the enhancement of the POS adoption. It is important to note that these fives significant variables cut across the three categories of the explanatory variables discussed in section 8.1. Two constructs (COMPT and TRAL) from the Rogers innovation attributes emerged as significant predictors of POS adoption. PROCOST emerged as significant construct under the switching cost variables while

GENDER and EDUCATIONAL STATUS are the two confounding variables that predict POS adoption in Nigeria.

Considering that previous studies have established low level of awareness as an inhibitor of POS adoption in Nigeria, the lack of knowledge about the existence of this platform could be associated with the inability of customers to try out this platform. Thus, the significance of TRAL (which has to do with customers' ability to try out new technology prior to adoption) as a predictor of POS patronage. The result of this construct implies that the more customers are able to try out this platform, the higher the propensity to adopt this technology. PROCOST entails the time and effort it requires to adopt a technology. PROCOST may not directly impact on individual customer where POS adoption is concerned, retailers as revealed in the interview findings may have to pay this cost in the process of trying to fully install the terminal in their outlets. This procedural cost, in turn, could impacts on the levels of adoption of this platform by customers as merchant may be withdrawn from the use of this platform thereby inhibiting the accessibility of customers to this channel. As discussed in section 8.3.1 about the significance of GENDER on ATM adoption, males do more of formal banking in Nigeria than females. This could justify why males have been predicted by this model as higher adopters of the POS compared to females. Moreover, females are less likely to overlook the risks associated with the usage of this platform compared to males, considering that scholars such as Harris and Jenkins (2006) argued that males are involved in more risky behaviours compared to females.

Also, for the significance of respondents' EDUCATIONAL STATUS, results presented in Table 8.13 above show that respondents with less than tertiary education have less propensity to adopt the POS. This finding corroborates the high level of illiteracy in the country discussed in section 1.1 of this study. According to the Vanguard Newspaper

(2015) report about 34% are not formally educated. Therefore, the literacy level of Nigerians could be said to impact on POS adoption.

Based on the findings of this research, a model shown in Figure 8.4 has been developed towards the enhancement of POS adoption in Nigeria.

Figure 8.4: *POS Adoption Model*
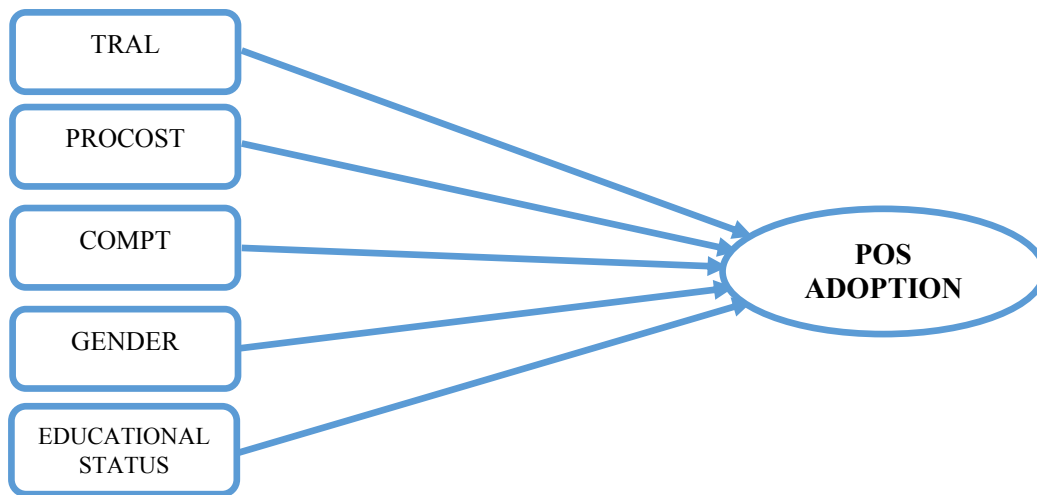
Source: Author generated based on the research findings

8.3.3 ONLINE BANKING ADOPTION AND THE EXTENDED MODEL OF THE DIT

The levels of adoption of the online banking service are presented in figure 8.5 below. The output shows that most individuals in the sample have hardly or never adopted an online banking platform. Those within the group "hardly and never" constitute about 68% of the sample and only about 17% of the sample frequently use the platform, thus revealing a negatively skewed distribution.

Figure 8.5: Online banking level of adoption
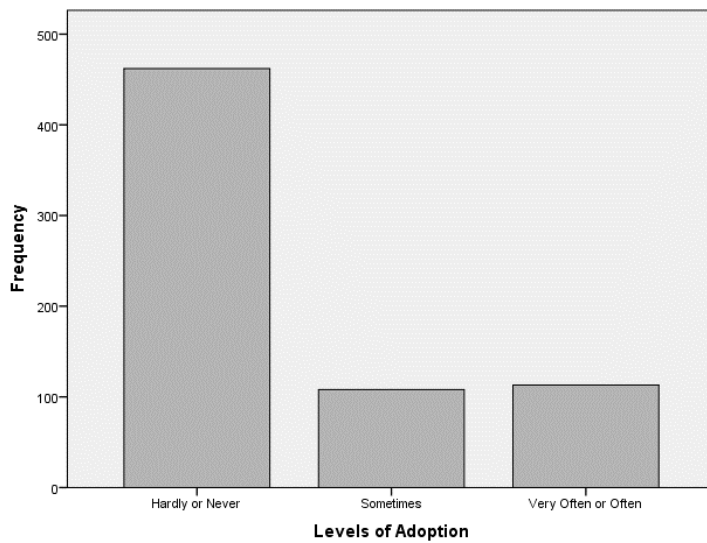
Socio-Demographic Attributes of Respondents: Online banking

The table 8.14 below presents the socio-demographic characteristics of the respondents

in relation to the level of adoption of the online banking.

Table 8.14: *Summary of the cases (Online)*

Variables	Responses	N	%
Online Banking Adoption Level	Hardly or Never	465	67.8
	Sometimes	108	15.7
	Very often or often	113	16.5
Gender	Male	389	56.7
	Female	297	43.3
Age	18 – 30years	284	41.4
	31 – 40years	207	30.2
	41 – 50years	121	17.6
	51 – 65years	74	10.8
Educational Status	No formal education	14	2.0
	Primary education	27	3.9
	Secondary education	108	15.7
	Tertiary education	537	78.3

The result of this analysis based on the output shown in table 8.14 above, suggests that

online banking adoption is much lower than the POS as at the time this study was

254

conducted. It is surprising that this platform has attracted few e-banking users despite the fact that the internet (which is an essential complementary asset to online banking adoption) penetration has been on a continuous increase in the country. As at the time this study was conducted 45.1% of the population were estimated as internet users (Internet Live Stats, 2016). The low adoption of this platform is supported by the findings of scholars such as: Popoola, (2013), Tarhini et al. (2015) who have also noted the disparity between the adoption of this platform and the high penetration rate of the internet technologies in similar study.

Ordinal Regression Results (Online Banking)

Further analysis to show the effects of each of the predictor variables (the factor variables and the covariates) on the level of adoption of online banking system was carried out.

The results are presented as follows:

- ❖ *Goodness of fit:*

  The finding of this analysis presented in Table 8.15 below shows that each explanatory variable included in this analysis significantly improved the ability of the model to predict the adoption of online banking. The results (p –value) shows that the final model has significantly improved the fitness of the data as the p-value of the chi-square is less than 0.05 significant level.

- ❖ **Pseudo *R*-square**:

  The result of this analysis as indicated by the Nagelkerke R-square value suggests that the model explains 32% of the variation relating to the adoption of online banking platform amongst the respondents. As noted in section 8.3.1, this value can be considered satisfactory. Therefore, the model is useful for predicting online banking adoption.

❖ *Parameter Estimates:*

Table 8.15 below shows the result of the predictive ability of each of the explanatory variables

Table 8.15: *Parameter Estimates - Online Banking*

Construct	Estimates	Wald	df	Sig.
RADVT	-.012	.516	1	.473
COMPT	.094	5.443	1	.020*
COMPLX	.034	1.051	1	.305
TRAL	.067	1.917	1	.166
OBSERV	.080	3.203	1	.073
PROCOST	-.133	12.383	1	< .001*
FINCOST	-.090	1.774	1	.183
RLNCOST	.015	.073	1	.787
COMP-ASST	-.099	4.683	1	.030*
USSRVC	-.090	2.261	1	.133
GENDER: Male	.472	9.104	1	.003*
Female	0[a]	.	0	.
AGE: 18-30years	.304	.940	1	.332
31 – 40years	.162	.257	1	.612
41 – 50years	-.132	.133	1	.716
50 – 65years	0[a]	.	0	.
EDUCATION: Less than Tertiary Education***	-.949	8.185	1	.004*
Tertiary Education	0[a]	.	0	.

**Test of parallel line χ^2 = 20.571 (df = 15, p-value = 0.151)

Final Model χ^2 (Compared with Intercept only model) = 197.056 (df = 15; p-value < 0.001)

Nagelkerke R-square = 0.321

Link function: Negative log-log

% of Correctly Predicted Adopters (those indicating "sometimes" + "very often or often") = 17.3

[a] = Reference category. * Significant construct at a 5% level of probability.   ** The Test of parallel lines in this model is not statistically significant with p-value at 0.151. This suggests that the model is valid for all categories of online banking adoption. *** No Adoption within the "No education", "Primary Education", and "Secondary Education" so all adopters in these categories were amalgamated.

This result indicates that five constructs significantly predict online banking adoption.

These are: PROCOST, COMPT, COMP-ASST, GENDER and EDUCATIONAL

STATUS. Apart from COMPT that has already been noted in a previous study by Olawepo and Akanbi (2013) as a significant predictor of online banking, the remaining four variables are unique to this study. Thus, revealing a different dimension of explaining online banking adoption aside from the very common factors such as: security concern or perceived risks, lack of infrastructures; which have been identified in previous studies (Ojo-Agbodu and Omah 2012; Popoola, 2013 and Egwu, 2015). The significance of the PROCOST (i.e. the time and effort required to adopt a technology) could be attributed to the fact that a lot of Nigerians are not used to conducting online transactions. As a result, they are not fully aware of the benefits that this platform affords, therefore, any delay or complex switching processes may inhibits the adoption of this platform. Moreover, need for this platform may not be justified by individual bank customers given that a lot of the business activities are still manually carried out in Nigeria (Oluchi, 2015), preference for cash payment and physical conduct of many business transactions is predominant. Also, in terms of the significance of COMP-ASST to this platform, customers need to have reliable access to adequate complementary assets (i.e. COMP-ASST) i.e. the required electronic devices such as Laptop, Desktop Computers, electricity as well as internet facilities to effectively adopt online banking. As revealed by one of the interviewee in section 6.4.2, the cost of a reliable internet data is quite high. It is apparent that not too many Nigerians will be able to afford the cost of monthly subscription of the internet when this cost is compared to the minimum wage paid by the Nigerian government. Furthermore, the unstable power (electricity) supply may have also contributed to the significant of COMP-ASST towards online banking adoption.

As far as the significance of gender is concerned, Oluwole, (2014) accounts for a preference for traditional daily contribution by Nigerian business women compared to

the regular banking transactions could substantiate this result. This gender variation as noted earlier in section 8.3.2 can also be seen as a reflection of Harris and Jenkins (2006) perspective that males are involved in more risky behaviours compared to females considering that perceived risk has been identified by Popoola, (2013) and Egwu, (2015) as inhibitor of e-banking adoption in Nigeria. As regards the educational status as a predictor of online banking adoption, this could be attributed to the fact that a significant number of Nigerians are yet to be formally educated (see section 1.1), thus, those with less than tertiary education may find the adoption process challenging. Based on this research findings, a model has been developed towards the enhancement of online banking adoption in Nigeria. This is shown in figure in 8.6 below.

Figure 8.6: *Online Banking Adoption Model*
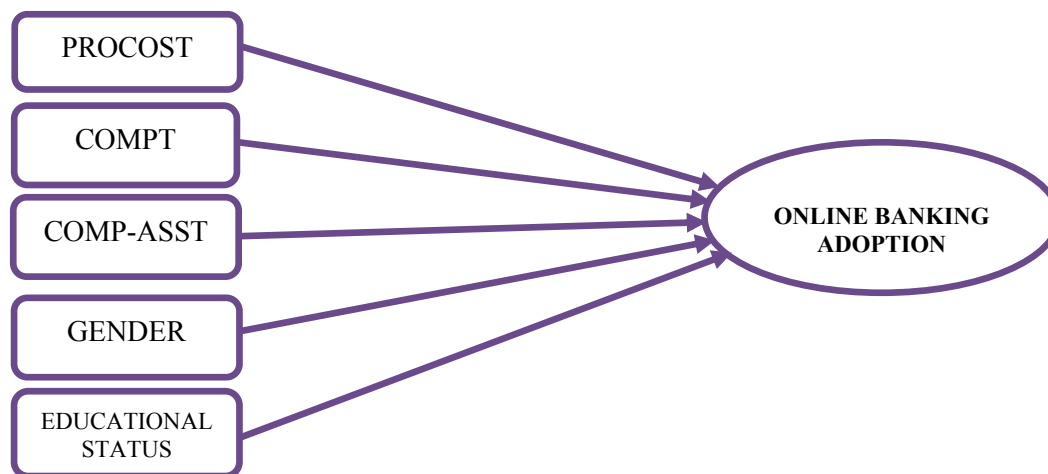
Source: Author generated based on the research findings

8.3.4 MOBILE BANKING ADOPTION AND THE EXTENDED MODEL OF THE DIT

The adoption of mobile banking with respect to other e-banking platforms previously considered (i.e. ATM, POS and online banking), is very minimal. A greater percentage of respondents have hardly adopted this technology. Those within the group category "hardly or never" constitutes over 77% of the sample size, thus, revealing a negatively skewed distribution. (See figure 8.7 below).

Figure 8.7: Mobile banking levels of adoption
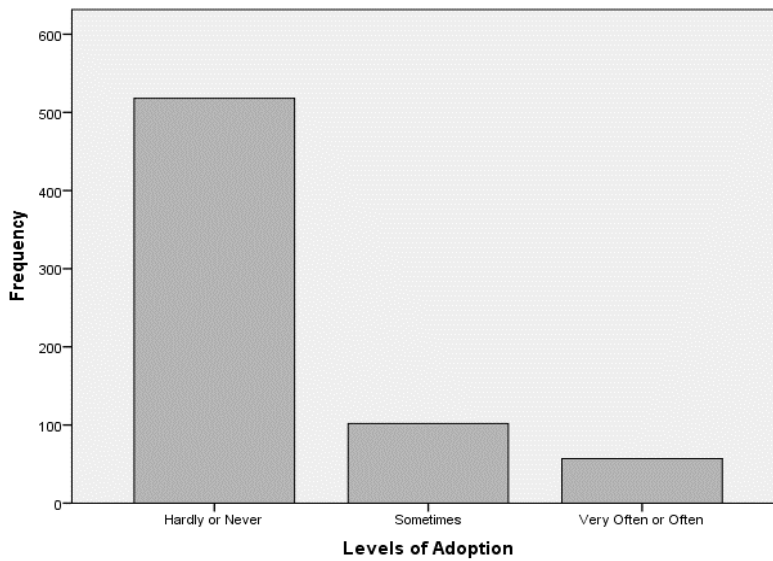
Socio-Demographic Attributes of Respondents: Mobile Banking

Table 8.16 below shows the demographic characteristics of the respondents in relation to the level of adoption of the mobile banking system in Nigeria.

Table 8.16: *Summary of the cases (Mobile Banking)*

Variables	Responses	N	%
Mobile Banking Adoption Level	Hardly or Never	494	77.1
	Sometimes	99	15.4
	Very often or often	48	7.5
Gender	Male	367	57.3
	Female	274	42.7
Age	18 – 30years	261	40.7
	31 – 40years	193	30.1
	41 – 50years	115	17.9
	51 – 65years	72	11.2
Educational Status	No formal education	14	2.2
	Primary education	26	4.1
	Secondary education	104	16.2
	Tertiary education	497	77.5

The result of this analysis based on the output shown in table 8.16 above, suggests that

the adoption of this platform is much lower when compared to the first three platforms

259

previously analysed (i.e. ATM, POS and the online banking). The high level of mobile phone penetration (Agwu and Carter, 2014) and the high estimated figure of internet users (Internet Live Stats., 2016) in the country appeared to have little impact on the adoption of this alternative banking channel.

Ordinal Regression Results (Mobile Banking)

The results of the ordinal regression analysis of the predictor variables and the adoption of mobile banking are presented as follows:

❖ *Goodness of fit:*

The results of this analysis show that all the explanatory variables included in this analysis significantly improve the ability of the model to predict the adoption of mobile banking.

❖ **Pseudo *R*-square**:

The result of this analysis as indicated by the Nagelkerke R-square value shows that the model explains 21% of the variation relating to the adoption of mobile banking among the respondents. Although the predictive strength of this model for mobile banking adoption is poor, the results are indicative of the possible factors affecting the limited patronage of this technology.

❖ *Parameter Estimates:*

Table 8.17 below shows the result of the analysis of the predictive ability of each of the predictors.

Table 8.17: *Parameter Estimates - Mobile Banking*

Construct	Estimates	Wald	df	Sig.
RADVT	.018	.756	1	.385
COMPT	.089	3.281	1	.070
COMPLX	.057	1.753	1	.186
TRAL	.022	.164	1	.685
OBSERV	.060	1.326	1	.250
PROCOST	-.056	1.557	1	.212

Construct	Estimates	Wald	df	Sig.
FINCOST	-.194	6.015	1	.014*
RLNCOST	.150	5.659	1	.017*
COMP-ASST	.027	.326	1	.568
USSRVC	-.053	.580	1	.446
GENDER: Male	.237	1.766	1	.184
Female	0ᵃ	.	0	.
AGE: 18-30years	.839	3.795	1	.051*
31 – 40years	.409	.859	1	.354
41 – 50years	.092	.035	1	.852
50 – 65years	0ᵃ	.	0	.
EDUCATION: Less than Tertiary Education***	-.916	.5.132	1	.023*
Tertiary Education	0ᵃ	.	0	.

Test of parallel line χ^2 = 14.769 (df = 15, p-value = 0.468)

Final Model χ^2 (Compared with Intercept only model) = 110.724 (df = 15; p-value = < 0.001)

Nagelkerke R-square = 0.213

Link function: Negative log-log

% of Correctly Predicted Adopters (those indicating "sometimes" + "very often or often") = 2.7

ᵃ ⁼ Reference category. * Significant construct at a 5% level of probability   **The Test of parallel lines in this model is not statistically significant with p-value at 0.468. This suggests that the model is valid for all categories of Mobile banking adoption.   *** No Adoption within the "No education", "Primary Education", and "Secondary Education" so all adopters in these categories were amalgamated.

The result indicates that four constructs emerged as significant predictors of mobile banking adoption and these are: FINCOST, RLNCOST, AGE and EDUCATION. While FINCOST (quantifiable financial resources required to adopting e-banking) as a significant predictor of mobile banking adoption in Nigeria aligns with the findings of Agwu and Carter, who conducted a study a study on the benefits, problems and prospects of mobile phone banking in Nigeria in 2014, RLNCOST, AGE and EDUCATION emerged as a unique finding to this research. As suggested in the analysis of online banking adoption presented in section 8.3.3 the significance of RLNCOST (i.e. psychological and the emotion losses bank customers may experience when they switch to e-banking) to mobile banking adoption may also be attributed the

261

fact that many Nigerians are not acquainted with electronic transactions as there is high preference for physical demand of goods and services compared to online transactions (Oluchi, 2015). Therefore, having to switch to mobile banking whereby banking transactions can be conducted via the mobile phones may necessitate a culture change as opposed to a mere switch of banking services. Such change according to Trott (2012) entails a switch in the perceptions and established behavioural pattern which requires formation of different consumption practices. The finding of this research thus, suggests that the more individual bank customers enjoy the relationship they have with their bank, the more they will be willing to change their behavioural banking pattern towards the adoption of mobile banking. The significance of this variable may have been facilitated by the communal nature of the Nigerian society where social interaction amongst fellow members of the community is cherished (Columbus, 2014). Further to this, a relationship between cultural influence and mobile banking adoption has been established in a previous research (Bankole, Bankole and Brown, 2011) thereby corroborating the findings of this research.

The results also suggest a linear effect in the age group. The result show that younger age category (18-30years) have a higher propensity to adopt this technology. This result supports the interview findings in section 6.2.4 which reveals that the younger generation patronised e-banking platforms more than any age group. Also, as indicated in section 1.1 of this study, many Nigerians lack formal education as a result may find the adoption of mobile banking challenging, thus, explaining the significance of educational status as a predictor of mobile banking.

Based on this research findings a model has been developed towards the enhancement of this e-banking platform. This is shown in Figure in 8.8 below.

Figure 8.8: *Mobile Banking Adoption Model*
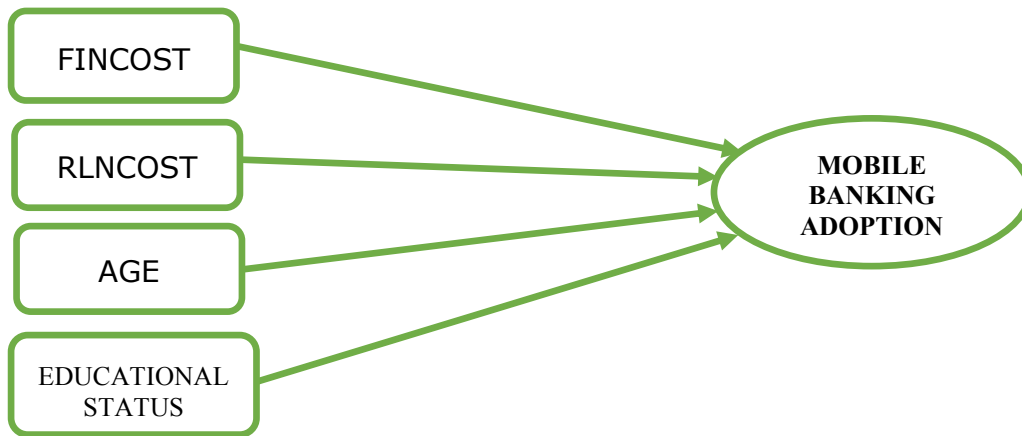
Source: Author generated based on the research findings

8.3.5 TELEPHONE BANKING ADOPTION AND THE EXTENDED MODEL OF THE DIT

Telephone banking is the last category of the electronic platform that this study investigates. The adoption level as presented in figure 8.9 below show that a very tiny fraction of the respondents use the platform (4.2%). Thus, indicating a negatively skewed distribution.

Figure 8.9: *Telephone Banking Levels of Adoption*
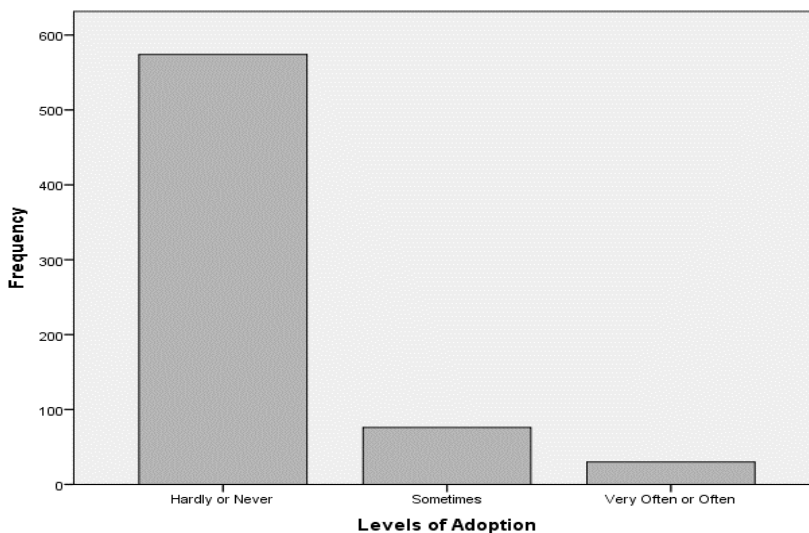
Socio-Demographic Attributes of Respondent: Telephone banking

The demographic characteristics of the respondents in relation to the levels of adoption of the telephone banking is presented in Table 8.18 below.

Table 8.18: *Summary of the cases (Telephone)*

Variables	Responses	N	%
Online Banking Adoption Level	Hardly or Never	549	85.4
	Sometimes	67	10.4
	Very often or often	27	4.2
Gender	Male	368	57.2
	Female	275	42.8
Age	18 – 30years	260	40.4
	31 – 40years	196	30.5
	41 – 50years	114	17.7
	51 – 65years	73	11.4
Educational Status	No formal education	14	2.2
	Primary education	26	4.0
	Secondary education	104	16.2
	Tertiary education	499	77.6

The result of this analysis based on the output shown in Table 8.18 above, suggests that this platform is the least patronised when compared to the previous platforms that have been analysed. This result can be justified with one of the interview findings which indicated that banks hardly provide this services because of lack of security measures associated with this platform. Thus, inhibiting the provision of this service to bank customers.

Ordinal Regression Results

The researcher also conducted ordinal regression analysis for this platform. The results of this analyses are presented as follows:

❖ *Goodness of fit*:

Following the result of this analysis, it can be deduced that all of the explanatory variables included in this analysis improve the ability of the model to predict the adoption of telephone banking.

❖ **Pseudo *R*-square**:

The result of this analysis as indicated by the Nagelkerke value shows that the explanatory variables can only explain about 6.2% of the proportion of the variance of the adoption of this platform.

❖ ***Parameter Estimates:*** Table 8.19 below shows the result of the analysis of the predictive ability of each of all the predictors

Table 8.19: Parameter Estimates (Telephone Banking)

Construct	Estimates	Wald	df	Sig.
RADVT	.033	1.732	1	.188
COMPT	-.072	2.071	1	.150
COMPLX	.070	2.059	1	.151
TRAL	.001	.000	1	.993
OBSERV	-.018	.102	1	.749
PROCOST	-.112	3.863	1	.049*
FINCOST	.046	.203	1	.653
RLNCOST	.048	.377	1	.539
COMP-ASST	-.086	1.897	1	.168
USSRVC	.093	1.270	1	.260
GENDER: Male	.451	3.992	1	.046*
Female	0[a]	.	0	.
AGE: 18-30years	-.175	.240	1	.624
31 – 40years	-.249	.488	1	.485
41 – 50years	-.963	4.425	1	.035*
50 – 65years	0[a]	.	0	.
EDUCATION: Less than Tertiary Education***	.0891	.071	1	.790
Tertiary Education	0[a]	.	0	.
Test of parallel line χ^2 = 14.632 (df = 15, p-value = 0.478)				
Final Model χ^2 (Compared with Intercept only model) = 25.733 (df = 15; p-value = 0.041)				
Nagelkerke R-square = 0.062				
Link function: Negative log-log				
% of Correctly Predicted Adopters (those indicating "sometimes" + "very often or often") = 0				

[a] = Reference category. * Significant construct at a 5% level of probability   **The Test of parallel lines in this model is not statistically significant with p-value at 0.478. This suggests that the model is valid for all categories of telephone banking adoption.   *** No adoption within the "No education", "Primary Education", and "Secondary Education" so all adopters in these categories were amalgamated.

Although the result of this analysis presents three constructs (PROCOST, GENDER and AGE) as significant predictors of telephone banking adoption, this result cannot be accepted as valid. This is due to the fact that this platform of e-banking was confirmed by the majority of the service providers that were interviewed as unavailable to individual bank customers. It can also be inferred from the responses obtained from the open-ended question included in the questionnaire that this platform was conceived as customer service enquiries line by the very few respondents who claimed to use this medium. Based on this argument, the interpretation and discussions on this platform will not be carried out and no model will be developed from this results as there is an initially need for this service to be offered by the commercial banks in Nigeria to individual bank customers before the evaluation of its level of adoption can be objectively carried out. It is suggested at this point that subsequent research should consider the investigation of the modalities and the security implications associated the provision of this service as many of the service providers pinpointed security concern as the main hindrance to the provision of the telephone banking in Nigeria. Table 8.20 below shows a summary of the significant constructs in the previous four models

Table 8.20: *Summary of significant variables in each model*

Explanatory Variables	ATM	POS	Online Banking	Mobile Banking
RADVT	-	-	-	-
COMPT	0.004	.002	.020	-
COMPLX	-	-	-	-
TRAL	-	.001	-	-
OBSERV	< .001		-	-
PROCOST	-	< .001	< .001	-
FINCOST	-	-	-	.014
RLNCOST	-	-	-	.017
COMP-ASST	-	-	.030	-
USSRVC	-	-	-	-
GENDER: Male:	0.043	.001	.003	-
Female	0^a	-	-	-

Explanatory Variables	ATM	POS	Online Banking	Mobile Banking
AGE: 18 – 30years	-	-	-	.051**
31 – 40years	0.30	-	-	-
41 – 50years	-	-	-	-
50 – 65years	0ª	-	-	-
EDUCATIONAL STATUS: No Formal Education	< .001	-	-	-
Primary Education	0.001	-	-	-
Secondary Education	0.038			-
*Less than Tertiary Education		< .001	.004	.023
Tertiary Education	0ª	-	-	-
% OF CORRECTLY PREDICTED ADOPTERS	84.6	28.1	17.3	2.7

Notes: 0ª Reference category. Level of significant at 0.05. *used for POS, Online and Mobile Banking – No adoption within the "No education", "Primary Education", and "Secondary Education" so all adopters in these categories were amalgamated. **level of significance at the border line.

Based on the summary of findings presented in table 8.21 above, it is evident that compatibility (COMPT) gender and education emerged as significant predictors of ATM, POS and the online banking adoption. Procedural switching costs (PROCOST) was also noted to significantly predicts the adoption of both the POS and the online banking adoption. Furthermore, findings show that observability (OBSERV), Traliability (TRAL) and complementary assets (COMP-ASST) are peculiar predictors of the ATM, POS and the online banking adoption respectively. Also, AGE emerged as predictor of ATM and barely significant for mobile banking as well. It is important to note the uniqueness of the mobile banking. Findings show that none of the Rogers' innovation attributes emerged as significant predictors of this e-banking platform. Financial switching costs (FINCOST), the relational switching costs (RLNCOST), AGE and EDUCATIONAL STATUS are the significant predictors of this channel.

Furthermore, this study shows that EDUCATIONAL STATUS is a crucial predictor of all the four e-banking platforms. Therefore, as demonstrated by this empirical finding, it is important to note that the degree of penetration of these platforms is not independent of the level of education of the individual banks customers.

In sum, the researcher has presented the results of the quantitative approach to this study and various factors that predict the adoption levels of each of the e-banking platforms have been identified. Therefore, key findings finding towards e-banking adoption in Nigeria from both the interviews and the survey questionnaire analyses shall be compared in the next section.

8.4 COMPARISON OF KEY FINDINGS OF THE QUALITATIVE RESEARCH (INTERVIEWS) AND THE QUANTITATIVE RESEARCH (SURVEY QUESTIONNAIRES) TOWARDS E-BANKING ADOPTION IN NIGERIA BY INDIVIDUAL BANK CUSTOMERS

As discussed in chapter five of this study, this research adopted convergent parallel mixed methods: a research method that allows the parallel collection of qualitative and quantitative data which are then separately analysed, so that the results obtained can be compared prior to final interpretations and conclusions (Creswell, 2013b). Following this methodological stance, it is imperative at this point to integrate the findings of both the qualitative and the quantitative research of this study before interpreting the results of this study.

On a general note, findings of both types of research confirmed that amongst the five e-banking platforms that this study set out to investigate, only four (ATM, POS, online banking and the mobile banking) are currently made available to individual bank customers by the commercial banks in Nigeria. The following factors were also confirmed by both methods of investigation as crucial to the enhancement of e-banking adoption in Nigeria:

❖ *Security of E-banking Platforms*: both findings identify the safety and the reliability of the platform as a vital determinant to e-banking adoption. While the service users (survey respondents) confirmed this issues as barriers to the relative advantage of the e-banking platforms (see section 7.7), this is further

268

substantiated by the following views of some of the service providers (interviewees):

> *"We have some wonderful set of individuals whose focus is to hack into accounts and that why a lot of Nigerians don't want to do electronic or online payments from their account"……… All these e-platforms are prone to fraudulent activities. On a daily basis we get informed of fraud cases, we have cases where a customer's card it in his pocket and somehow, someone is withdrawing money from his acct far away using the same card. We have issues like that on a regular basis"*
>
> *……EBO - 01*

> *"In fact e-banking have a lot of challenges ………Security of the platform discouraged people from using the platform has there were many cases of clone cards used to withdraw money from customers account"*
>
> *………EBO - 08*

* ❖ ***Enlightenment Need:*** Findings from both the service users and the service providers pointed at the need to consciously educate individual bank customers about the importance and benefits of utilisation the e-banking platforms that have been provided by the commercial banks in Nigeria. As discussed in section 7.7 of this study, a significant proportion of those who indicated their reasons for minimal or non-patronage of this platform suggest that the negative perceptions of these people about the effectiveness, compatibility and the usefulness of platform have impacted negatively on adoption level of the e-banking. This can be addressed through a conscious, strategic and effective enlightenment campaign. The following interview statements also support this claim:

> *"For the uneducated customers, they seem not to be interested because they don't really want to understand the advantages especially the old ones, they don't really know how to use these electronic means of banking that's why they don't use them"*
>
> *…….EBO - 02*

"We still have some laggards in the country who don't really believe in all these electronic banking and they believe that electronic banking is highly susceptible to fraud, so those are the reasons why some still reframe from using such channel"

.......EBO – 05

"The problem lies with the customer, not the bank side, as customers are not fully aware of the advantages until they need help, maybe because of having to call: use their airtime or because they are not sure the platform exist and it works. In sum ignorance is the major factor"

...........EBO - 06

❖ ***Infrastructure:*** Infrastructure such as electricity and internet were specifically mentioned as key drivers of e-banking adoption. Poor supply of power (electricity) in the country and high cost of internet data access were revealed as barriers to the adoption of e-banking platforms. Findings from the services users points that e-banking platform is inefficient and unreliable due to network failure (see section 7.7). As a result, those who seldom patronise the platform stated reasons such as minimal advantage of the platforms when compared to manual banking. The following statements made by two of e-banking officials corroborate this point:

"Instability of current infrastructure affects the willingness of customers to adopt these channels. Poor infrastructure leads to higher service failure rate"

.... EBO – 07

"A lot of Nigerians ....the target customers don't really have access to the internet, the ones that do, don't have power/electricity to power their devices......... how many people will be able to run generator to be able to have access to be able to have access to banking services"

.........EBO - 01

This study has found these three factors as crucial issues that apply to all the e-banking platforms. It is important to note that this result is in line with the findings of Adepoju, Babalola and Onyeabor, (2011); Ogunlowore and Oladele, (2014), Tarhini et al. (2015) & Tijani and Ilugbemi, 2015) following their studies on e-banking adoption in Nigeria.

Thus, incorporating these issues with the specific predictors of each of the e-banking platforms as revealed by the quantitative research yielded more robust findings towards e-banking adoption by individual bank customers in Nigeria. This implies that securing every financial transaction that customers carry out on these platforms, strategic enlightenment campaign tailored to specific group of customers and the provision of adequate infrastructural facilities that supports e-banking adoption are fundamental to the adoption of any of the e-banking platforms. These basic issues need to be addressed before dealing with specific issues that are peculiar to individual platforms. Figure 8.10 below showcases a robust model for e-banking adoption based on the results obtained from the integration of the key findings of the interviews and survey questionnaires.

FIGURE 8.10: SUMMARY OF FINDINGS
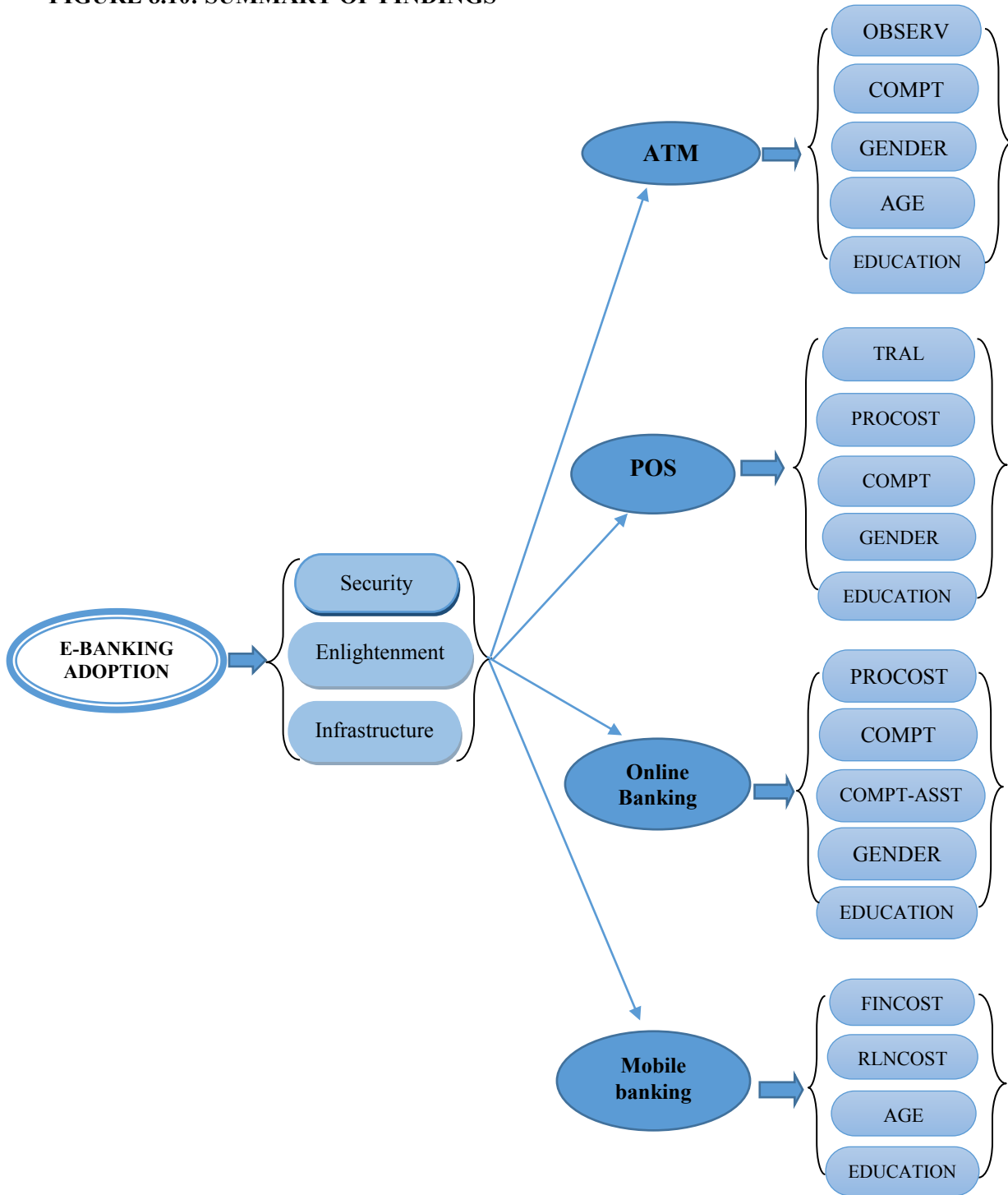
Source: Author generated based on research findings

CHAPTER NINE
DISCUSSION OF RESEARCH FINDINGS

9.0 INTRODUCTION

The underpinning objective of this study as discussed in chapter three is to explore e-banking adoption in Nigeria by investigating the general starting conditions of the commercial banks in Nigeria with respect to a developed economy (the UK). Furthermore, this study also set out to examine the impact of the extended model of the DIT on the levels of adoption of the e-banking platforms by individual bank customers as well as the perceived risks associated with the patronage of these platforms.

As a sequel to the last two chapters on data analysis and findings, this chapter presents the discussions on the results of this research and the feedback from the expert witness. It is worthy of note that this discussion section is not solely based on the results of this study but also informed by contributions obtained from the academic and professional experts in addition to the feedback from conferences where this study has been presented.

The chapter is divided into three main sections. Section 9.1 presents an overview of the research objectives; the research questions and the methodological approach to the study. Section 9.2 presents the discussions on the key findings of this study and in section 9.3, a further attempt was made to strengthen the conclusions of this research.

9.1 A REVIEW OF THE RESEARCH OBJECTIVES, THE RESEARCH QUESTIONS AND THE METHODOLOGY

As discussed in chapter three, five specific objectives were developed towards achieving the research aims. These are as follows;

1.   To evaluate the starting conditions of e-banking take up by commercial banks in the UK and Nigeria.

2.   To examine the availability of the required complementary assets that support e-banking services in both countries.

3.   To examine the impact of the perceptions of the e-banking service providers (the commercial banks) and the service users (individual bank customers) on e-banking adoption in Nigeria.

4.   To evaluate the significance of the extended model of the DIT on the adoption of e-banking services by individual bank customers in Nigeria

5.   To determine the effect of the perceived risks on the adoption of e-banking products and services in Nigeria.

The first two objectives mainly focus on the first part of this study which entails the comparative analysis of the starting conditions of e-banking in the UK and Nigeria using the secondary sources of data. The last three objectives centred on the influence of the extended model of the DIT on e-banking adoption in Nigeria as well as the effect of the perceived risks of e-banking services in Nigeria.

These objectives cover the two interrelated parts of this study. Based on the stated objectives, seven research questions which serve as a guide to research (Simon, 2011) were also developed. As shown in Table 9.1 below, each of this research questions was tailored to the research objectives and as such, answers to these questions will result in the fulfilment of the overall aim and objectives of this study.

Also, as stated in chapter 5, this research finds its tenets in the realists' philosophical approach which enables a mixed method approach to a research study (Creswell, 2014). Following this, both the qualitative and quantitative research methods were adopted for the second part of this study to investigate the extended model of the DIT on e-banking adoption and the perceived risks of the e-banking services. Table 9.1 below shows the

relationships between each of the research objectives, the research questions and the methods applied.

Table 9.1: *Overview of Research Objectives, Questions and Methods*

S/N	Research Objective	Research Question	Adopted Method
1	To evaluate the starting conditions of e-banking take up by banks in the UK and Nigeria	1a. What were the starting conditions for e-banking adoption in both countries?	secondary sources of data
		2a. What is the readiness of commercial banks in Nigeria at the time of e-banking take up?	Qualitative method (interviews of e-banking service providers)
2	To examine the availability of the required complementary assets, in both countries that support e-banking products and services	1b. What were the available complementary assets in both countries?	secondary sources of data
3	To examine the impact of the perceptions of the e-banking service providers (the commercial banks) and the service users (individual bank customers) on e-banking adoption in Nigeria	2b. What are the levels of adoption of the e-banking platforms in Nigeria by individual bank customers?	Quantitative method (Questionnaire survey of e-banking service users)
		3a. What is the relationship between the perceptions of individual banking customers in Nigeria about e-banking services and the levels of adoption?	Quantitative method (Questionnaire survey of e-banking service users)
		3b. What is the effect of the perceptions of the commercials banks regarding e-banking services provided on the low levels of adoption by individual bank customers?	Qualitative method (interviews of service providers)
4	To evaluate the significance of each of the variables in the extended model of the DIT on the levels of e-banking adoption by individual bank customers in Nigeria	4. What are the implications of the extended model of the DIT on the levels of adoption of each of the e-banking platforms and the perceived risks on e-banking services in Nigeria	Quantitative method (Questionnaire survey of e-banking service users) and Qualitative method (interviews of service providers
5	To determine the effect of the perceived risks on the adoption of e-banking products and services in Nigeria.		

The discussions of findings of this research which is considered in section 9.2 below is directed to how each of these research questions have been answered.

9.2   DISCUSSIONS ON THE RESEARCH FINDINGS

This research has been carried out with careful consideration of the seven research questions developed in an attempt to achieve the fundamental aims and objectives of this study. Findings of this research are discussed in line with these research questions. These are presented in the following subsections:

9.2.1   Starting Conditions for E-Banking Adoption in the UK and Nigeria

As discussed in chapter four of this study, the underlying objectives of the banks, the strategies adopted by banks, the path dependency and the available complementary assets were the major yardsticks used in assessing the starting conditions of the e-banking in both the UK and Nigeria. These starting conditions were evaluated in a bid to examine whether these factors have contributed to the relative success of e-banking in a developed economy so as to provide an insight into the cause of low levels of e-banking adoption that is currently experienced in Nigeria. The fundamental idea of this approach is to identify vital lessons that Nigeria and other developing countries can learn in this regard. Based on this, two research questions; 1a and 1b (see Table 9.1 above) were developed and findings which were presented in Chapter 4, are discussed as follows:

Objectives of Banks: As suggested by Nellis and Lockhart (1995) & Chiemeke et al. (2006) studies, both the UK and the Nigerian banks saw the need to introduce e-banking as a way to sustain the emerging competitive market thereby, gaining the loyalty of customers and maximising profit. This objective can be regarded as basic to e-banking take up in both countries. However, disparity lies in the pressure faced by Nigerian banks to introduce a payment system that will comply with the international standard (Adewuyi, 2000) and also in line with the CBN cash policy discussed in chapter four of this study. Increased advocacy for banking automation

also served as a driving force. This pressure mandated most of the commercial banks to take steps towards e-banking take-up at the expense of their capabilities. This, impacted on the approach and subsequently yielded a low level of adoption of other platforms apart from the ATM. It is important to note that the state of preparedness of banks at the start of e-banking was also investigated through a primary type of research. The discussions on this aspect of study which is presented in the later subsection substantiates this claim.

Strategies Adopted by Banks: It was evident that banks in both countries had to invest in the ICT to enable the take-up of e-banking services. However, the gap is obvious in the fact that the initial e-platforms adopted by banks in the UK (the ATM and the telephone banking) were based on the level of infrastructure (Melnick, 2000; and Consoli, 2005). Nigerian banks seem to have leapfrogged by taking up e-banking services in which the core infrastructure in the country does not conveniently accommodate in a bid to comply with the dictates the CBN. Therefore, the lack of adequate infrastructure can be attributed to the low adoption of many of e-banking platforms in Nigeria considering that Ogunlowore and Oladele, (2014) study on e-banking and customer satisfaction clearly identified the lack of infrastructure as a hindrance to e-banking adoption in Nigeria. This view is also supported by the findings of Tunmibi and Falayi (2013, pp. 64), these scholars stated that the "Nigerian banking system is not stable enough for e-banking". Furthermore, one of the interview findings of this research (i.e. lack of adequate infrastructure) is again reinforced as a key catalyst to wider adoption of e-banking by individual bank customers in Nigeria (see section 8.4). Therefore, in line with the perspective of Mols, Bukh and Neilsen (1999), it can be deduced that e-banking adoption is not a function of what banks offer but to a large extent on what

customers can afford. Thus, the basic lesson to draw from this analysis is that the availability of these services does not guarantee adoption by customers.

The path dependency: Following the perspective of Gáspár (2011) on path dependency, previous historical occurrences create institutional patterns that affect the future. The consideration of e-banking with respect to path dependency called attention to the antecedents of the banking industry that supports e-banking adoption in both countries. Findings, as presented in chapter 4, table 4.5 of this study, revealed that banks in the UK had a link with the technological adoption in the provision of banking services (see appendix I) compared to Nigerian banks. It was observed that e-banking take up by banks in the UK was not a paradigm shift but a gradual transition as opposed to what was found in Nigeria where governmental policy led to a significant change in the mode of banking operation (Padoa-Schioppa, 2001), which resulted in the introduction of e-banking platforms. A gap that was created based on lack of such antecedence could also account for the low level of e-banking adoption by individual bank customers. A sudden change from the old traditional banking to the utilisation of e-platforms seems to have created a "culture shock" coupled with the general resistance people pose to change. Based on this, it may necessitate longer time than planned before individual customers can be rightly positioned to adopt e-banking platforms especially the platforms that are less patronised. The following statements made by one of the interviewees also substantiates this conclusion:

> "but again, it is always difficult for people to drop old habit because of the fear that people have in Nigeria for example, the economy is cash dependent so we do a lot of cash transaction. Introducing technology based platform means trying to reduce cash transactions and you want people should do most of their transactions using the internet, mobile phones and payment cards. Now for customers who are used to cash it's going to be very difficult for the bank to say we are scrapping everything so customers should begin to

use your card. People are not used to this…… Like I said there is this culture: an average Nigerian wants to hold cash"

……..EBO – 08

Furthermore, Haruna (2012), also pointed at the relationship between a successful cash-less society in Nigeria and the need for a culture change. According to this scholar, the implementation of the cash policy should be exercised with caution until measures are put in place to enhance change in the banking culture.

The Available Complementary Assets: E-banking complementary assets such as good telecommunication networks, the internet and electronic devices are crucial to the initial take up of e-banking by banks. The disparity in the starting conditions was also noted in this area. Banks in the UK according to Bob Telephone files (2013) had easy access to such channels, unlike Nigerian where poor telecommunication network was experienced until the emergence of privately owned telecommunication networks and internet service provider (ISPs) as well as the liberalisation of the economy that resulted in the influx of electronic devices. The effect of having the banks in Nigeria to source for these complementary assets from private business organisations impacted in the overall cost of making available such services to the individual bank customers. This transfer of cost (in form of service charge) could have minimised the levels of e-banking adoption by individual bank customers. Although, many e-banking officials interviewed claimed that the adoption of e-banking costs individual bank customers relative nothing but a further investigation indicated that some banks still charge customers for bank cards, the token used to online banking transactions and for MasterCard etc. (see chapter 6, section 4),

In sum, while there are similarities in the starting conditions of e-banking in both countries, such as the drive towards gaining customers' loyalty, meeting up with the demands of the competitive market, maximising profits, etc., the differences are

enormous. The disparity such as lack of preparedness by banks in Nigeria, infrastructural gap, the sudden paradigm shift in the banking industry and cost transfer due to lack of complementary assets could account for the low levels of adoption of e-banking in Nigeria. The identification of these loopholes associated with the starting points of e-banking in Nigeria in comparison with the UK that has recorded a relative success pointed attention to the factors that are fundamental to the success of e-banking take up by banks. Therefore, uncovering key lessons towards e-banking innovation adoption.

The next subsection presents a discussion of the readiness of commercial banks in Nigeria at the time of e-banking take up

9.2.2 Readiness of commercial banks in Nigeria

 The level of preparedness of commercial banks in Nigeria was further investigated through primary research. It was observed that apart from the poor level of infrastructure that posed a challenge to e-banking take up by commercial banks, the majority of the banks initiated e-banking channels as a result of the CBN consolidation policy which implies that a significant proportion of the banks would not have introduced such platforms without the mandate of the policy. This, therefore, confirmed the assertion of Adepoju and Alhassan, (2010), who noted that the introduction of e-banking services by commercial banks in Nigeria was due to the need to survive the post-consolidation era. Although, technologically speaking, EBO – 01 Bank, EBO – 04 Bank, EBO – 06 and EBO – 08 claimed readiness for the provision of e-banking services to individual banks customers, EBO-03 bank, EBO-05 and EBO-08 had difficulties. According to them, switching processes to e-banking was time consuming, necessitated the need to upgrade of the supporting mechanisms. It was also noted that the capital-intensive nature of these platforms slowed down the pace of e-banking take

up by these banks. Based on these factors, it can be concluded that e-banking take by these banks is a quest for survival, maintenance of market share and global relevance as emphasised by Adewuyi (2011). From the preceding, it can be inferred that majority of the commercial banks in Nigeria were not fully in the best position to take up e-banking.

In summary, the findings on the starting conditions of banks in Nigeria and the UK, their level of preparedness and the available complementary assets and has clearly answered research questions 1a, 1b and 2a respectively. Thus, achieving research objectives 1 and 2 in which these research questions were directed. The next subsection presents the discussion on objective 3 which is based on the impact of the perceptions of both the service providers and the service users of e-banking on levels of e-banking adoption in Nigeria.

9.2.3 The levels of adoption of the e-banking platforms by individual bank customers:

Survey questionnaires were used to explore the levels of e-banking adoption by individual bank customers. Despite the high-level advocacy for e-banking by the CBN and the commercial banks in Nigeria, high level of disparity exists between the adoption of the ATM and other e-banking platforms. This study recorded over 70% frequent patronage for the ATM followed by the POS which is just about 15%.

ATM has remained the most patronised platform, and this corresponds with Yaqub et al. (2013) findings. The result also corroborates with the results of a study conducted by the Ernst and Young (EY); (an advisory firm on global and financial business) in 2014 which revealed that Nigerians are the heaviest users of the ATM platform amongst the 43 African countries surveyed (Encomium, 2014). Customers acknowledge that the highest volume and value of their

banking transactions are conducted via this platform as previously identified by Abubakar (2014) in his study on the mode of payment in Nigeria. According to Abubakar, the level of ATM patronage in terms of volume and value of transaction is 85% and 90% respective. This evidence supports the cash oriented nature of the economy and therefore contradicts the push towards the cash policy of the CBN.

Executing a cash policy in an economy that is cash based will hardly yield the expected result (i.e. substantial adoption of other e-banking platforms). One of the interviewees noted that: *"The Nigerian economy is still cash-based. People want to see their cash and its only ATM that can provide this" ......EBO – 01.* This is also evident in the fact that 78% of respondents that indicated their reasons for their level of ATM patronage (see section 7.7.2) is based on their perception of the ATM as a better banking innovation. This percentage of the respondents is high compared to other platforms which were mostly regarded less/or non-compatible with individual customers based mainly on the lack of complementary assets and lack or little relevance of these other platforms to an average bank customer, insecurity of these other platforms were also emphasised as inhibitors to patronage. There is a fundamental need to consciously adopt more realistic, effective and efficient e-banking platforms that support the peculiarity of the Nigerian economy before the implementation of the cash policy.

9.2.4 The relationship between the perceptions of individual banking customers about e-banking services and the levels of adoption

Findings presented in sections 7.4, 7.5 and 7.6 respectively suggest that individual bank customers have a positive perception of e-banking services which were assessed based on the extended model of the DIT as a whole. A relatively

high positive perception of the five innovation attributes put forward by Rogers was observed while the cost variables were also mainly perceived positively. However, the indicated positive view of this extended model did not facilitate a substantial level of adoption across the various e-banking platforms. Consequently, it can be concluded that in this context, a positive perception of innovation attributes such as the e-banking does not equate to adoption as postulated by Rogers (1995) owing to the discussions in previous section which revealed that other platforms are less patronised. Following this finding, a further investigation on factors in the extended model of the DIT that could predict adoption of each of this factor was carried out. Discussion of these results are presented in section 9.2.6. From the preceding, it is evident that the positive perceptions of customers have not influenced increased adoption of e-banking platforms. In the next subsection, a discussion of the perceptions of the e-banking service provider (the commercial banks) on e-banking levels of adoption is presented.

9.2.5 The perceptions of the commercials banks and the low levels of adoption

As a way of creating a balanced and robust approach to investigating the adoption levels of e-banking platforms, the perspective of the service provider was regarded as crucial having established the viewpoints of the service users. As discussed in chapter five of this study, a qualitative research method (in-depth interview) was adopted to assess the effect of the perceptions of the commercial banks in Nigeria on the current levels of e-banking adoption. Findings regarding this issue as presented in section 6.4 of this study pointed at the major factors perceived by banks as inhibitors of the e-banking adoption by individual bank

customers were regarded as external to the banks. In their view, banks claimed that they have provided these services for customers' use and created a level of awareness that should enhance adoption. Also, it was noted that the factors attributed to low patronage are issues outside the scope of the banks as such facilitating adoption is to a large extent dependent on the customers and other stakeholders.

A critical assessment of the nine factors identified by these banks which are *doubt* exhibited by customers toward the platform, *security concerns*, *lack of adequate internet services*, *preference for cash*, *lack of enabling devices*, *poor infrastructure*, *low level of literacy*, *resistance to change* and *ignorance* cannot all be viewed as issues that are beyond the capacity of the banks. It is understandable that issues such as adequate internet services, enabling devices, infrastructure, and the literacy level could be regarded as issues that involve the intervention of the government and other business organisations. Factors such as doubts about the efficacy of the platforms, security of the platforms, preference for cash, resistance to change and ignorance are issues that can be addressed through a conscious and strategic enlightenment campaign tailored to the various class of individual customers. For instance, findings from the interviews indicated that banks had tightened the security of e-banking platforms, and a constant upgrade is usually carried out (see section 6.5.2), but it is evident that prior unpleasant experiences have deterred a significant number of customers from using such platforms. Customers thus, need to be sensitised on the extent to which banks have gone to make all the platforms safe for use. Even some of the issues noted as requiring the government or other third-party interventions can as well be taken up by banks as part of their corporate social responsibilities e.g.

promoting literacy level in the country. This will, in the long run, impact positively on e-banking adoption as Oyeleye, Sanni and Shittu (2015) also found in line with this study a relationship between level of education and e-banking adoption. Based on the evidence presented in this study, it can be concluded that the perception of banks towards factors that limit e-banking adoption need to be addressed. This is because banks have a greater role to play in providing solutions to those factors which they identified as critical issues militating against e-banking adoption rather than seeing such as external to them.

Also, regarding the switching costs, customers tend to have negative perceptions of these costs. For instance, as evident in the results presented in section 7.6 many of the respondents perceived that switching to e-banking entails procedural, relational as well as financial switching costs. Whereas, the majority of the e-banking officials interviewed underplayed the significance of these costs in hindering customers from adopting these platforms (see section 6.5). It is important for banks to understand the effect of the perceptions of these costs on the levels of e-banking adoption so as to enable Nigerian banks to promote e-banking adoption effectively. Adequate enlightenment may be useful in this regard.

In sum, findings and discussions on the level of e-banking adoption, the perception of both the service users and services providers have addressed research question 2b, 3a and 3b respectively. Based on this, it can be concluded that the research objective 3 has been achieved. The next subsection presents a discussion on the findings towards objective 4 which has to do with the evaluation of the significance of each of the variables in the extended model of

the DIT on the levels of e-banking adoption by individual bank customers in Nigeria

9.2.6 The levels of adoption of the e-banking platforms and the extended model of the DIT

In section 9.2.5 above, discussions on the perceptions of individual bank customers were presented in relation to the extended model of the DIT which reflected a positive perception of this model without a corresponding effect on the levels of adoption. This section offered a discussion on the findings of the significance of each of the constructs embedded in the DIT extended model as well as the effect of the confounding variables on the levels of adoption of the five e-banking platforms. These confounding variables as discussed in section 8.1 of this study are age, gender and educational status. Data used for this part of the study were obtained from the individual bank customers through a survey questionnaire and analysed by ordinal regression: the statistical tool discussed in Chapter 5 of this study). The variations in the constructs that emerged as significant predictors for individual platforms suggest that same method cannot be utilised for all the platform when strategizing approaches to increase e-banking adoption. The study has shown that each platform has its peculiarities. The discussion on each of these platforms is as follow:

The ATM: As far as this platform is concerned, it was revealed that only two (observability and Compatibility) out of the five Rogers' innovation attributes emerged significantly in predicting the levels of ATM usage, none of the other construct defined as cost variables has any effect on ATM adoption. However, all the three confounding variables significantly predict ATM adoption. This finding aligns with the report of Olatokun and Igbinedion (2009), Izogo et.al (2012) and Odumeru (2012) who found observability and compatibility; age and education;

and gender to directly influence ATM adoption in Nigeria respectively. Based on this an increase in the level of adoption of this platform will necessitate strategies geared towards increasing the degree of the observability of this platform to non-users and its compatibility with their way of life. Worthy of note is the fact that the age, education and gender of non-users need to be taken into consideration when driving strategies to further adoption.

The POS

As opposed to ATM, findings, as presented in section 8.3.2 of this study, revealed that slightly different constructs emerged as significant predictors of the POS adoption levels in Nigeria. These constructs include *Trialability; Compatibility; Procedural Switching Costs; Gender and Educational Status*. These five constructs cut across the Rogers innovation attributes, the cost variables as well as the confounding variables. Increasing the adoption levels of the POS will facilitate conscious efforts in minimising hindrances to e-banking adoption based on these factors. With respect to trialability, providing a mechanism whereby customers can try out some of this platform to have a feel of how it works may be an essential ingredient to promoting POS adoption. As mentioned in subsection 9.2.3 above, effective public enlightenment will enhance individual bank customers' perception of the compatibility of this platform, thereby increasing adoption as inherence benefits will be made more clearly to non-users. The findings of the AG Partnership (2015), corroborates this claim. The cost of switching to POS also needs to be taken into consideration in terms of the needed information and the effort and time required to switch. Information about switching to POS must be made easily accessible to individual customers while the effort and time required to adopting this platform should as well be minimal. Facilitating conditions such as internet services and electricity are key factors that will promote greater adoption of the

POS. Also, more females need to be encouraged to use this platform. Those with educational status below the tertiary level should as well be encouraged as findings of this study as presented in section 8.3.2 shows a significant gap in adoption rate between male and female. And also, in line with the perspective of Siyanbola (2013), limited literacy level posed a threat to greater patronage of this platform. This claim is evident in this study as wide gap exists between customers who have acquired tertiary education and the other three categories (No formal education, primary education and the secondary education holders).

Online Banking

In line with the POS platform, the constructs that emerged as significant predictors of this platform shared some of the variables in the extended model of the DIT as well as all the three confounding variables. *Procedural Switching Costs, Compatibility, Complementary Asset, Gender and Educational Status* are the five significant predictors of the online banking based on the findings of this research. This suggests that positive perception of the time and effort needed to switch to online banking will enhance greater adoption. This factor also reinforced the need for a more effective enlightenment campaign on the use of the online banking platform as identified Adeoti, (2013) and also in line with the findings of this study coupled with increased perception of the customers on the level of compatibility of this innovation with their lifestyle. The importance of basic infrastructure such as the electricity, and other essential complementary assets as the internet and electronic devices cannot be overemphasised in devising strategies to increase e-banking adoption as a whole. While the burden of making online banking services available lies with the bank the onus solely rests on the customers to have access to complementary assets such as laptop, internet access which is essential to adopt this platform. The lack or inadequate provision or high cost of

288

accessibility of these complementary assets will debar increased adoption. It is, therefore, imperative as also suggested by Adepoju, Babalola and Onyeabor, (2011) & Ogunlowore and Oladele, (2014) for some complementary assets to be carefully put in place or made affordable so as to enhance adoption of this platform. Also, this study found more males tending towards online banking their female counterparts, therefore, it is important to a devise means to further encourage female adoption of this platform. This claim is also supported by Yuen, (2013) in a study which found a relationship between gender and the online banking adoption in the USA and Malaysia. Furthermore, education, the last significant predictor of the adoption of this construct aligns with the findings of Karjaluoto, Mattila and Pento, (2002) who found that previous experience of customers in Computers and technology use as a link to the intention to patronise online banking. Since lower patronage of this platform is associated with respondents with the lower level of education (below the tertiary level), banks may need to take extra effort to educate customers in this category to enhance patronage. This strategy of increasing online banking is also suggested by Karjaluoto, Mattila, and Pento (2002). This effort still reiterates the need for effective enlightenment previously emphasised.

Mobile Banking

Mobile banking platform based on the finding of this study is distinct compared to the other platforms previously discussed. The significance of the *financial switching costs and the relational switching* cost are peculiar to this platform. Thereby, showcasing the uniqueness of this e-banking channel. This implies that to enhance further adoption of this platform careful consideration should be given to the associated financial switching costs which is the quantifiable financial resources given up to adopt this platform and also customers' perceptions of their personal relationship with the bank official (i.e.

relational switching cost). As evident in this research and other previous studies such as Agwu and Carter (2014). The financial switching cost which has to do with the financial implication to switch to mobile banking will necessitates additional cost to the customers by ensuring that their mobile phones have enough airtime (and internet data where necessary) to be able to patronise this platform. Based on this result of this research, the higher the cost of maintaining the availability of this enabling mechanism the lower the level of adoption. Need thus, arise for the regulatory bodies to carefully assess how these mechanisms can be made affordable to an average bank customer or Nigerian citizens as a whole. It is important to note that, the high influx of mobile phone in the country (Obe and Balogun, 2007 & Omoefe and Egbokhare 2013), and the increase in internet penetration (Internet Live Stats, 2016) are useful indicators that will promote mobile banking. It is essential for customers to have access to affordable costs of airtime and the internet data subscription adequate for mobile banking. This conclusion is supported by one of the interviewees (EB – 06) who noted that: *"to enjoy some of these services customers need a fast internet service. This costs as high as 5,000.00 to N10, 000.00 a month"*.

Regarding the relational switching cost, Nigeria is a communal society where social interaction and communal relations is valued even in the business world. As established by the finding of this research, the existence of a good relationship between the individual bank customers and their bank officials predicts greater patronage of mobile banking. Therefore, banks are encouraged to adopt a more friendly approach in their strategic enlightenment campaign where mobile banking promotion is concerned.

Furthermore, respondents' *age and educational status* significantly predicts the adoption of this platform. This implies that banks need to tailor their marketing strategies to specific age groups. Also, the adopted strategies should put in to

consideration the educational status of their various customers. For instance, a more elementary and non-complex marketing approach can be used to encourage mobile banking patronage by customers with less than tertiary education.

Telephone Banking

Findings as presented in section 6.3 and subsection 8.3.5 show the initial need for subsequent research to investigate the security implication that has inhibited the provision of this services by commercial banks in Nigeria. Following which the need for increased adoption can be considered.

In sum, this section on the levels of the adoption of the various platforms of e-banking in relation to the extended model of the DIT has provided insight into the impact of this model on the levels of e-banking adoption. The model shows that certain constructs in the entire model are peculiar factors that predict each platform and as such different strategies are required to improve patronage. Having established this, it can be concluded that research question 4 which is tailored to objective 4 of this study has been addressed. The next subsection will present a discussion on the impact of the perceived risks of e-banking services in Nigeria; an investigation directed towards establishing objective 5 which is the last objective of this research study.

9.2.7 The perceived risks and e-banking services

The successful adoption of innovation such as e-banking as stated by White and Nteli (2004) is not entirely based on the provision of such services by the commercial banks but also a corresponding adoption by customers. Therefore, this study unlike previous research such as Lee, 2009) that considered only the customers' perception of risks, investigates perceived risks of e-banking services from both the services supplier and the services users as a distinct approach to exploring a major inhibitor of e-banking as established by this study and other research such as Alawode and Emmanuel (2009);

Tunmibi and Falayi (2013) and Siyanbola (2013). Findings on this issue indicated that both the service provider and the services users of e-banking platforms acknowledged security of the platform as a primary concern. From the supplier perspective, a lot of effort and investment have gone into securing the platforms for use, despite this, fraudsters are constantly devising means ahead of banks' security measures, and this has been a significant threat to the industry. On the other hand, a large number of the respondents indicated as part of the reasons for minimal or non-patronage of most of these platforms due to the perceived security threat. These findings corroborate with Tunmibi and Falayi (2013) study on IT security and e-banking in Nigeria whose study identified this factor in similar study. The poor state of the infrastructure was also identified by the service provider as another major risk as this often result in e-banking service failure. Loss of banking information was also pinpointed as another risk entailed in the patronage of e-banking platforms.

Therefore, conscious and collaborative efforts are required by all stakeholders to minimise these major risks as it is evident that the security the platform is fundamental to advocating for the patronage of these platforms. The CBN drive for a cashless society will only attain relative success if these issues are carefully addressed. These findings have helped to answer the later part of research question 4 tailored towards objective 5 of this study.

9.3   KEY RESEARCH FINDINGS AND THE EXPERT WITNESS ACCOUNT

As demonstrated in chapters seven and eight, the primary data obtained for this study through the in-depth interviews and the survey questionnaires were subjected to rigorous qualitative and multivariate statistical data analysis respectively to arrive at logical conclusions. However, as a way to further strengthen the validity of this research, the key findings of the study were presented to an expert witness. This person

has been working as an e-banking official in one of the reputable commercial banks in Nigeria for over 9 years, and he is currently the Federal Capital Territory/North Regional Head of e-channels and Solution Delivery of his Bank in Nigeria. His level of expertise qualifies him to function in the capacity of an expert witness. For ethical reasons, this person shall be referred to in this account as "The Expert".

The Expert was given to understand in writing the essence of the research, and the role he was expected to play as an expert witness. Following The Expert's verbal agreement to take part in the study, a document was prepared by the researcher and forwarded to him. This document (see Appendix VII) contained a brief introduction to the study and the importance of an expert feedback to this research. Following this, the key findings of the study were presented to The Expert. The feedback obtained from The Expert substantiate the findings of the research and also provided further insight into possible areas for future research. These are presented in Table 9.2 below:

Table 9.2: *The feedback from The Expert*

Expert Comments on Key Findings	Key Quotes from the Expert Interview
E-banking Starting Points: The Expert agrees with the disparity established by this study. He emphasised that this gap is evident in the strategies adopted by Nigerian banks to promote e-banking patronage which has not yielded a substantial gain	*"Some of the e-products are not well conceptualised, and as such, there are flaws in some of them, and hence customers are finding it difficult to buy into these products".*
The Three Fundamental Inhibitors: The Expert also believes that the Security of e-banking platforms, poor infrastructure (specifically, adequate electricity and Internet) and lack of strategic enlightenment of individual bank customers are the three generic and fundamental inhibitors of e-banking adoption by individual bank customers in Nigeria.	*"Well said! These 3 are critical issues.... On the security of the various e-products, banks make provisions to engage the highest level of security for these products, but because the bad guys are also dynamic in their thinking, the security issue has to be a constant thing.....Unfortunately for infrastructure, this is not peculiar to e-banking products as it is a national issue. However, banks are engaging other solutions to work around this. Almost all the hardware infrastructure are supported by alternative power solutions (solar, inverter, UPS, etc.) while the internet access is also being looked into critically too. The issue of enlightenment is a continuous one.*
ATM Adoption and the Extended Model: The Expert agrees with the variables that have emerged as significant predictors of ATM adoption in Nigeria. (i.e. Compatibility, Observability, Gender and Educational Status)	*"I agree with you. Banks are deploying solutions that will stimulate usage of ATMs and also make it more compatible with customers' lifestyle. Solutions like language selection, audio solutions and graphics are being considered."* *"Yes, more males use these products compared to females. This difference tallies with what goes on in the bank*

Expert Comments on Key Findings	Key Quotes from the Expert Interview
	branch transactions too as more males visit banks for banking transactions compared to females"
POS Adoption and the Extended Model: The opinion of the Expert about the significance of "Compatibility" aligns with the findings of this research. He noted that the lifestyle and the perceptions of customers are the driving forces to increase the patronage of this platform.	*"You are right. Even though it is the retail and the wholesale businesses that require the POS terminal, the lifestyle and the perceptions of customers are driving tools in the adoption and usage of this terminal for transactions."*
Online Banking Adoption and the Extended Model: Compatibility, Procedural Switching Costs, Gender and Educational Status were the four variables that emerged significant to this platform. The Expert believes these factors are essential to increase adoption of the online banking in Nigeria.	*"I agree with you. Banks are deploying solutions that will stimulate usage of Internet banking and also compatible with customers' lifestyle."* *"Because of the security implication over the internet, banks try to be extra careful before registering customers. This delay sometimes could be discouraging to some customers."*
Mobile Banking Adoption and the Extended Model: Although The Expert agrees with the research findings on the significance of relational switching costs, age and the educational status on mobile banking adoption in Nigeria, buts disagrees with customers' perception about associated financial switching cost. While he acknowledged that the negative perceptions of customers could have debarred a lot of customers from patronising this platform, the Expert emphasised, that no extra financial switching cost is associated with this platform.	*"Well, we are trying to sensitise customers about this, because this may be the reason why a lot of them are not using this product. Presently, mobile banking is free in all banks and as such, I do not think cost is an issue. The transaction fees on mobile banking are the same as branch charges."*
Telephone Banking Adoption and the Extended Model: According to this finding of this study non-provision of Telephone banking to individual bank customers is due to inadequate security measures but The Expert claimed is priority issue	*"I do not think it is because of the security measures. It is more of a priority issue. Banks prioritise product deployment and telephone banking is just not on a top priority list of banks, and that is why its deployment is not as visible compared to other channels."*

The key findings of this research and the feedback of the Expert Witness have yielded more robust and objective conclusions for this study. The study conclusions and recommendations are, therefore, presented in the next chapter.

CHAPTER TEN
CONCLUSIONS AND RECOMMENDATIONS

10.0   INTRODUCTION

This research has explored e-banking adoption in Nigeria by considering the starting condition of e-banking take up in comparison to the UK in a bid to draw relevant lessons crucial to the enhancement of e-banking levels of adoption. In addition, the study further investigated the impact of the extended model of the DIT on the levels of adoption of the various platforms and perceived risks. The two interrelated approach adopted in this study did not only provide a robust view of investigating the adoption of an innovation such as e-banking but also provided a distinctive approach to such investigation. The consideration of the cost variables with respect to exploring e-banking adoption in Nigeria is peculiar to this study coupled with adding this to the "mix" Rogers five innovation attributes. This study, based on the existing literature recognised the need for this research and appropriate methodological approach was adopted. Suitable analytical techniques that enhanced the validity of the research findings were adopted and findings were discussed objectively. However, this study was not void of challenges. The limitations encountered are discussed in the next subsection.

10.1   THE CHALLENGES AND LIMITATIONS OF THE STUDY

Every study irrespective of how carefully planned and conducted has its challenges and limitations, limitations are factors/situations beyond the control of the researcher which arise in the course of the research and impede the smooth execution of the research plan (Simon and Goes, 2013). This study is not an exception, as there were occurrences that militated against the initially envisaged research plans. The challenges and limitations of this study are discussed as follows:

The Challenges

1. On major challenge of this study is that the duration estimated for data collection was elongated by about two months due to the fuel crisis witness in Nigeria in May 2015 (the estimated start date of survey questionnaire administration). The fuel crisis as reported by the British Broadcasting Corporation (BBC, 2015) crippled business as the services of mobile telecommunication services, banks and airlines were affected. This situation made it challenging to get access to research participants. Moreover, frustration experienced at this period by the citizens may have an adverse effect on their responses towards e-banking adoption. As a result, survey questionnaire administration had to be delayed till the crisis subsided. This would have affected the timely completion of this research but for the fact that the researcher envisaged possible delays and allotted extra time for the entire phase of data collection and analysis for this study. While this delay prolonged the estimated time frame for the field survey, it had minimal impact on the overall finishing time of the research. The researcher therefore, recommends careful consideration for unforeseen circumstances for future research.

2. Getting access to some bank customers such as the EBO - 08 bank that operates as a regional bank was also quite challenging. The travel cost impacted negatively on the cost of administering the questionnaire (i.e. increased the actual financial cost). While this cost was managed from the relatively small budget for miscellaneous expenses, a more realistic sum is recommended for future research.

The limitations

1. Also, the respondents were largely of people with tertiary education as those with lower educational status were reluctant to participate in the research. Broader participation of respondents would have created a more robust view of e-banking adoption from respondents from all levels of education qualifications. Therefore, incorporation of strategies to encourage wider coverage of bank customers with lower educational status is recommended for future research.

2. Unlike the UK, banking officials are some of the most difficult personnel to access due to the pressure and magnitudes of their work schedule. Many of these officials work in the office till late evening and sometimes, occasion may demand that they also work during the weekends. Therefore, it took a longer period than estimated to get their commitment and participation in this study. Some banks did not even respond to this request despite the fact that they requested an official letter of introduction which specifies the aims and objectives of the research. Perhaps a wider coverage of the existing commercial banks in Nigeria would have been possible if they had all responded. Despite this challenge, seeking participation from all the existing commercial banks at the beginning of this study enabled a substantial response from all the three tiers of bank categorization discussed in chapter five of this study. Based on this level of participation, the sample size is considered representative enough for this study.

3. The researcher was only able to gain access to only one expert witness within the allotted time frame for this study. As such, only the feedback of one expert witness was used, perhaps the incorporation of the views of two or more expert witnesses would have provided a more robust feedback.

In spite of these challenges and limitations, the research was completed and contributed significantly to the body knowledge. These contributions are discussed in sub-section 10.2 below.

10.2   CONTRIBUTIONS TO THE BODY OF KNOWLEDGE

As discussed in chapter three, this study set out to explore the levels of e-banking adoption in Nigeria by individual bank customers by investigating the starting conditions of e-banking in the UK and Nigeria and also by extending the DIT model with specific cost variables as well as exploring the effect of the perceived risks on e-banking adoption. This study has made significant contributions to the body of knowledge in three main domains namely:

1. Theoretical Contributions

2. Methodological Contributions

3. Practical Contributions

1. Theoretical Contributions – Despite the viability of the five innovation attributes put forward by Rogers in predicting innovation adoption (Stephenson, 2003), previous studies such as Wang et al. (2012); Manoranjan, Pradhan and Snigdha (2014) have established the need for additional variables to be added to these attributes to enhance the DIT model especially in developing countries. The findings of this study also suggest that the consideration of only the five innovation attributes is inadequate in explaining the levels of adoption of e-banking platforms in Nigeria as positive perceptions of these variables by individual bank customers have not led to increased adoption of these platforms. While the 5 attributes are necessary they are not sufficient to explain adoption/non-adoption as shown in previous studies. This study has made

three theoretical contributions to the study of technology innovation adoption (e-banking) in Nigeria by;

a. *Demonstrating the need for the contextual application of the model;*

b. *Establishing cost variables as necessary additions to the model*; and

c. *Pointing to the importance of confounding variables* in exploring e-banking in Nigeria.

These three theoretical contributions are discussed as follows:

a. Contextual Approach to Innovation Study in Nigeria: The significance of some of the cost variables established by this study re-emphasized that the DIT model needs to be extended by the inclusion of other variables which are more specific to the environment that is being studied. For instance, the cost variables (i.e. procedural switching costs, financial switching costs, relational switching costs, complementary assets and the scope of available services) may be relevant in explaining e-banking innovation adoption in developing societies where there lack of inadequate provision of ICT and infrastructure. Scholars that intend to apply the DIT model in developing countries should consider the incorporation of such variables. This is because all the cost variables except the scope of available services (see table 8.1) emerged as significant predictors of e-banking.

b. Significance of Cost Variables: Prior research conducted especially in developing countries has considered the addition of other variables such as consumer's trust and governmental support (Rambocas and Arjoon, 2012) or the integration of variables from two theoretical models such as the Technology Acceptance Model (TAM) variables with the innovation attributes of DIT in explaining innovation adoption in the banking sector as evidenced in the study

of Audi et al., (2016) in Ghana. Following a critical review of literature, this study considered imperative (in line with the perspectives of Khalil, Barbuta-Misu and Stroe, (2008); Wang et al, (2012) the need to extend the DIT model by adding three other variables (classified as cost variables) to the mix of five innovation attributes of Rogers, thereby exploring more deeply the current levels of e-banking adoption in Nigeria by individual bank customers. This study established that whilst the system design may be compatible with internet use the fact that a user does not have the necessary complementary assets means that they will have to incur a set of costs to adopt these platforms. In essence, comparative advantage of e-banking adoption in Nigeria applies to those who have reliable access to the complementary assets otherwise they have to incur a set of costs to benefit from the service. This associated cost factor may inhibit increased adoption of this innovation. In addition, the incorporation of cost variables gives room for the consideration of what Rogers referred to as "system-blame" This is because there is push for increased adoption of e-banking in a country that is inadequate in terms of the ICT and infrastructural development.

c. Significance of the Confounding Variables: Furthermore, confounding variables (i.e. age, education and gender) were not considered by Rogers to influence adoption of new technology. The result of this study has demonstrated the need for the model to consider the addition of such variables as contributory factors to technology innovation adoption. For instance, the younger age group categories (18-30yrs and 31-40yrs) were predicted as higher adopters of e-banking platforms than the rest of the groups. Gender also impacts on the levels of adoption of e-banking platforms.

In sum, this study has contributed to theoretical knowledge by revealing the necessity for a contextual application of the DIT model in explaining e-banking adoption in Nigeria. The need for the model to be modified to recognise the effect of confounding variables is a further contribution to theory.

2. Methodological Contributions – The methodological contribution of this study can be considered from the following three perspectives:

a. *The consideration of the starting conditions:* This research contributes to the body of knowledge by investigating the starting conditions of e-banking in the UK and Nigeria. As established in Chapter one of this study, the UK serves as the starting point for some innovations in the banking industry and as also recorded a substantial degree of success in e-banking adoption by individual bank customers. Therefore, comparing the starting points of a country that has achieved relative success with one that is struggling to increase patronage of e-banking platforms by individual banks customers is a contribution to methodological approach in investigating the low levels of e-banking adoption in Nigeria. This approach demonstrated the historical link between the starting points of e-banking in Nigeria and the low levels of adoption currently experienced in the country. The disparity in the starting conditions as established by this study serves as a lesson that can be drawn from one text (such as the UK) to another (i.e. developing countries) when planning for increased adoption of e-banking in developing countries. Therefore, researchers can adopt this approach in future research to investigate factors that may impact on the current situation of a given technology innovation.

b. *The Statistical Analysis*: As discussed in chapter five of this study, multiple regression or structural equation modelling are the alternative approaches to analysing ordinal data obtained for the quantitative part of this study. However, contrary to the popular practice of many scholars who would rather disregard the ordinal nature of such data either by treating or replacing it with nominal data so as to fit an ordinary linear model technique, the researcher has contributed to methodological practice by adopting an ordinal regression model as the statistical analytical tool which recognized the ordered nature of the data analysed. In addition, the importance of adopting such statistical tool was made explicit to encourage upcoming researchers and other scholars to promote such practices despite the rigor such analysis entails. It also worthy of note that the statistical tool adopted complements the DIT theory. While the essence of the DIT is to predict the adoption of a new technology (Gouws and Outdtshoorn 2011), the ordinal regression model used for the analysis of the quantitative data obtained for this study also predicts the occurrence of a given phenomenon (Norusis, 2005). This synergy has enhanced the confidence in the results and conclusions of this study.

3. ***Practical Contributions*** – The contributions of this researcher to professional practice are also in three angles. These are discussed as follows:

a. *The Consideration of the starting conditions:* The loopholes, associated with the starting conditions of e-banking in Nigeria which adversely impacts on the adoption of e-banking platforms, serve as key lessons for Nigeria and other developing countries should they need to initiate new technology in any sector of the economy. Therefore, this study has contributed to practical knowledge by demonstrating the importance of the starting conditions of a new technology to

the overall success of such innovation. As evident in the research findings, the basic loopholes identified at the start of e-banking adoption in Nigeria such as lack of adequate infrastructure (the electricity and the internet) still pose a serious challenge to e-banking adoption by individual bank customer as at the time this study was conducted. This suggests the importance of considering such fundamental issues before initiating the deployment new innovation.

b. *Strategy implication:* This study has contributed to practice by showcasing specific factors that predict greater adoption of each of the e-banking platforms. Based on this, stakeholders and policy makers are able to devise specific strategies to promote adoption of all the four e-banking platforms based on the result of this study. Also, with careful consideration to the high level of commitment that may be required to devise specific strategies to enhance adoption of each of these platforms, each model indicates the order of the significance of the key variables and as such Banks and other Stakeholders can prioritise their effort on factors that are most significant.

10.3 CONCLUSIONS AND RECOMMENDATIONS

Following the various findings of this research and in line with the scope, aims and objectives of this study, it can be concluded that it is essential to critically assess the availability of the enabling mechanisms/structure before introducing an innovation such as e-banking. The importance of this assessment is to evaluate and carefully direct the approach to that which fits such innovation. Underestimating or ignoring the impact of these fundamental structure usually have a negative impact on adoption as evident in the findings of this research which reveals that the level of infrastructure of the country

does not conveniently supports the uptake of this innovation. The opinion of the expert witness on this finding reinforces this conclusion.

Further to this critical assessment is to determine if a positive perception of such innovation will yield to adoption. This is because positive perceptions of e-banking by individual bank customers did not yield high adoption of e-banking services.

This study also concludes that, the security of the platforms, effective and strategic enlightenment campaign as well as the provision of the essential infrastructures are fundamental to the successful adoption of any of the platforms. And these are inadequate where e-banking products and services offered by the commercial banks in Nigeria are concerned.

Furthermore, as revealed by the findings of this research, different strategies are required to promote the adoption of the e-banking services currently provided by the commercial banks in Nigeria. Attempt to unify or adopt a singular approach will not yield a significant result.

It is therefore recommended that subsequent governmental policies and the CBN dictates on e-banking adoption should be formulated and or the modification of the existing policies based on the consideration of the enabling mechanism and specific approach should be adopted to implementing each of the platform rather than a generic strategy. Also, banks should consciously play a key role in ensuring effective delivery of e-banking. More strategies towards encouraging customers on greater patronage should be generated.

10.4   SUGGESTIONS FOR FURTHER RESEARCH

Procedural switching costs emerged as one of the significant inhibitors of POS adoption in Nigeria, while the expert witness account acknowledged this claim, he indicated that some other regulatory issues do affect the deployment of POS terminals. An investigation of these other regulatory frameworks is suggested for further research. Also, following the expert witness view on online banking adoption, the need to explore the relationship between the deployment of online banking and the security implications should be considered by future researchers. Furthermore, while this study has focused on e-banking platform adoption by individual bank customers in Nigeria, future research on inhibitors of the POS adoption by retailers should also be considered given that accessibility of the POS by customers is dependent on its availability with retailers. While this study has mainly explored the availability of e-banking channel, future research should consider what individual bank customers use these platforms for as a way of evaluating the rate of adoption of e-banking in Nigeria.

REFERENCES

ABUBAKAR, A. I., 2014 A Summary of Payment Modes in Nigeria [Online] http://www.cutebanker.com/helpdesk/index.php?/News/NewsItem/View/20/a-summary-of-payment-modes-in-nigeria [Accessed 27/07/16]

ABUBAKAR, A., SHAGARI, J. N. AND OLUSEGUN, K. L., 2015. The Relationship between Electronic Banking and Liquidity of Deposit Money Banks in Nigeria. *International Journal of Economics, Commerce and Management Vol. III, Issue 9. Pp 830-347*

ACHOR, P. N. AND ROBERT, A. 2013, Shifting Policy Paradigm from Cash-Based Economy to Cashless Economy: The Nigeria Experience *Afro Asian Journal of Social Sciences Volume 4, No. 4.4 Quarter IV, pp 1-16.*

ADEDEJI, L. O., BABATUNDE, M. A. AND ADEKANYE. T., 2015 Recapitalization Policy and Performance of Banks in Nigeria (2006 - 2013). *International Journal of Economics, Commerce and Management United Kingdom Vol. III, Issue 4, pp 1-12.*

ADEDIPE, B., 2004. The Impact of Oil on Nigeria's Economic Policy Formulation. [Online] http://www.odi.org/sites/odi.org.uk/files/odi-assets/events-documents/117.pdf. [Accessed 13/1/2015]

ADEGBAJU A. A. AND OLOKOYO F.O., 2008 Recapitalization and Banks' Performance: A Case Study of Nigerian Banks. *African Economic and Business Review Vol. 6 No. 1, pp 1-17.*

ADENUGBA, A. A. AND ILUPEJU, C.O., 2012 *Working Conditions of Female Marketers in Selected New Generation Banks in Ibadan, Nigeria.* [Online] at http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=4&ved=0CDQ QFjAD&url=http%3A%2F%2Fwww.transcampus.org%2FJORINDV10Jun2012%2FJorind%2 520Vol10%2520No2%2520Jun%2520Chapter30.pdf&ei=IZ-1U42xO4SOO8SegOAJ&usg=AFQjCNEfmQd363uQZcU6JY-O42TeOdPCig&bvm=bv.70138588,d.ZWU [Accessed 03/07/2014]

ADEOLA-OMOLE, O. S. B., 2013. An Empirical Investigation of Telephony Impact on Business Performance and Regional Development: Evidence from Small Businesses in Nigeria [Online] http://openair.rgu.ac.uk. [Accessed 28/06/16].

ADEOTI, O., AND OSOTIMEHIN, K, 2012 Adoption of Point of Sale Terminals in Nigeria: Assessment of Consumers' Level of Satisfaction *Research Journal of Finance and Accounting Vol 3, No 1, pp. 1-6*

ADEPOJU, A. S., AND ALHASSAN, M. E, 2010 Challenges of Automated Teller Machine (ATM) Usage and Fraud Occurrences in Nigeria - A Case Study of Selected Banks in Minna Metropolis *Journal of Internet Banking & Commerce, Vol. 15, Issue 2, pp 1-10.*

ADEPOJU, S.A. BABALOLA, G.A. AND ONYEABOR, G.A., 2011 Customers' Adoption and Usage of the Internet Banking and Other Web Services in Banking. *International Journal of Management & Business Studies Vol. 1, Issue 4, pp 48-51.*

306

ADESINA, A. A., AND AYO, C. K., 2010 An Empirical Investigation of the Level of Users' Acceptance of E-banking in Nigeria, *Journal of Internet Banking and Commerce Vol.15, No 1, pp 1-13.*

ADEWUYI, I. D., 2011 Electronic Banking in Nigeria: Challenges of the Regulatory Authorities and the Way Forward *International Journal of Economic Development Research and Investment, Vol. 2 No. 1, pg. 149 – 156*

ADEYEYE, A., 2015 Consumer Payment System and the Challenge of Confidence in National Payment System of Developing Countries: A Case Study of Nigeria. *Mediterranean Journal of Social Sciences. Vol 6 No 2 [Online] http://www.mcser.org/journal/index.php/mjss/article/viewFile/5939/5711 [Accessed 10/08/16].*

ADU, C. A., 2016 Cashless Policy and Its Effects on the Nigerian Economy. *European Journal of Business, Economics and Accountancy Vol. 4, No. 2, pp 81-88.*

AFIGBO, C., ALI, N. AND MUEGGE, S., 2007. The Nigerian telecommunications industry: An industry forecast *Engineering Management Conference, IEEE International*, pp 312-317

AGBAEZE, E. K., UDEH, S. N. AND ONWUKA, I. O., 2015 Resolving Nigeria's dependency on oil – The derivation model. *Journal of African Studies and development Vol. 7 issue 1 pp. 1-14*

AGBAJE, O AND AYANBADEJO, K., 2013 Electronic Payments and Economic Growth in Nigeria: A Report by RTC Advisory Services Ltd [Online] http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CCA QFjAA&url=http%3A%2F%2Fmastercardcenter.org%2Farticle%2F2013%2F06%2FElectronic -Payments-and-Economic-Growth-in-Nigeria-July-2013.pdf&ei=BTG0U7bjDMTA7Aa58IGACg&usg=AFQjCNFop4Zh9t-a75fpnhG5ccp6Ejpsiw [Accessed 02/07/2014]

AGBOOLA, A. A., 2003 Impact of electronic banking on customer services in Lagos, Nigeria, Journal *of the Social Sciences, Vol.7, No.1 pp 29-36*

AGU, B. O, SIMON N. P. N. and ONWUKA, I. O., 2016 Mobile Banking – Adoption and Challenges in Nigeria. *International Journal of Innovative Social Sciences & Humanities Research 4(1):17-27*

AGWU, E., 2012, A Qualitative Study of the Problems and Prospects of Online Banking in Developing Economies – Case of Nigeria *Journal of Internet Banking and Commerce, Vol.17, No.3. pp 1-20*

AHASANUL, H., ISMAIL, A. Z. H. AND DARAZ, A. H., 2009 Issues of E-Banking Transaction: An empirical Investigation on Malaysian Customers Perception. *Journal of Applied Sciences* Vol.9 Issues 10, pp 1870-1879

AHMAD, R. AND BUTTLE, F., 2002, Retaining telephone banking customers' frontier bank, International *Journal of Bank Marketing Vol.20 No.1 pp 5- 16*

307

AJAYI, L. B., 2014 Effect of cashless monetary policy on Nigerian banking industry: Issues, prospects and challenges. International *Journal of Business and Finance Management research Vol. 2 pp. 29-41*

AJUMOGOBIA AND OKEKE, REPORT 2015 Nigerian Banking & Finance Sector: Legal & Regulatory Overview [Online] http://www.ajumogobiaokeke.com/assets/media/fe901de719bf50090ec56d7972bcfb48.pdf [Accessed 03/08/2016].

AJZEN, I. 1991. The Theory of Planned Behavior. Organizational Behavior and Human Decision Processes, *Vol. 50 issue 2, pp 179–211.*

AKINYOMI O. J. AND TASIE, C., 2011 Impact of Telecommunication liberalization in Nigeria *International Journal of Management and Enterprise Development Vol. 8 (2) pp.125-133*

ALHARBI, S. AND DREW, S., 2014 Using the Technology Acceptance Model in Understanding Academics' Behavioural Intention to Use Learning Management Systems *International Journal of Advanced Computer Science and Applications (IJACSA), Vol. 5, No. 1, pp 143-155*

AL-JUBRIL, I. M AND SOHAIL, M. S., 2012 Mobile Banking Adoption: Application of Diffusion of Innovation Theory. *Journal of Electronic Commerce Research Vol. 13. No. 4, pp 379-391*

ALI, M., 2014. Managing Post-Retirement Conditions in Nigeria. *Journal of Good Governance and Sustainable Development in Africa (JGGSDA), Vol. 2, No 2 pp.110-121.*

ALLISON, P. AND POMEROY, E., 2000. How shall we "know?" Epistemological Concerns in Research in Experiential Education. *The Journal of Experiential Education, Vol.23, No.2, pp 91-97.*

ALLISON, P., 2001. *Missing Data —Quantitative Applications in The Social Sciences* Vol. 136. Thousand Oaks, CA: SAGE publications Ltd

ALOMARY, I. AND WOOLLARD, J., 2015 How Is Technology Accepted by Users? A Review of Technology Acceptance Models and Theories. Proceedings of the IRES 17th International Conference, London, United Kingdom. [Online] http://eprints.soton.ac.uk/382037/1/110-14486008271-4.pdf. [Accessed 22/08/16]

ALRECK, P. L. AND SETTLE, R. B., 1995 *The Survey Research Handbook*. USA: Irvin Professional Publishing.

ALSUGHAYIR, A. AND ALBARQ, A. N., 2013 Examining Theory of Reasoned Action in Internet Banking Using SEM Among Saudi Consumers. *International Journal of Marketing Practices, Vol. 1, No. (1), pp.16-30,*

AL-SUKKAR AND HASAN, 2005, Towards a Model for the Acceptance of Internet Banking in Developing Countries, *Information Technology for Development*, *Vol. 11, No. 4, pp. 381-398*

AMIN, H., HAMID, M. R.A, LADA, S., AND ANIS, Z., 2008. The Adoption of Mobile Banking in Malaysia: The Case of Bank Islam Malaysia Berhad *International Journal of Business and Society Vol.9 No.2 pp 43-53*

ANDERSON ET AL. 1994 in Anderson, E., Fornell, C., and Rust, R. T., 1997 Customer Satisfaction, productivity and profitability. *Marketing science Journal Vol.16 No.2, pp 53-66.*

ANUKAM, L. C., 2007 Case Study IV – Nigeria. Water Pollution Control - A Guide to the Use of Water Quality Management Principles. [Online] http://www.who.int/water_sanitation_health/resourcesquality/wpccasestudy4.pdf . [Accessed 17/08/2016]

APCA PUBLICATION (Australian Payments Clearing Association), 2008 Magnetic *Ink Character Recognition - Technical Specification*, Publication 3.3.1 [Online] http://www.apca.com.au/docs/cheques/publication_33.pdf [Accessed 13/01/2014]

ÅRESTEDT, K., 2013 Factor Analysis: Exploratory Approaches. [Online] https://liu.se/medfak/larc-old/utbildning-information/forskarutbildningskurser/multivariate-statistics/course-material/1.564432/Faktoranalys_frelsning.pdf [Accessed 30/06/2016]

ARGYROU, G., 1997. *Statistics for Social Research*. MacMillan Press: London

ARIGOR, A. J., NYAMBI, N. I. AND OBUO, P. O. 2015. Analysis of Effect of Government's Trade Policy on Rice Supply in Three Local Government Areas Of Cross River State, Nigeria. *African Journal of Agricultural Research Vol. 10(8), pp. 829-834.*

ASAJU, K., AROME, S.AND ANYIO, S. F., 2014. The rising rate of unemployment in Nigeria: the socio-economic and political implications Global Business and Economics. Research Journal Vol. 3 (2): 12 – 32. [Online] http://journal.globejournal.org/index.php/GBERJ/article/view/96. [Accessed 03/10/2014]

ASHER, J, 1999. Small Business: Suddenly Everyone Wants a Piece of it" *American Association of Bankers Journal Vol. 91 No.4, pp 28-32*

ASIEGBU, B. C., NWAKANMA, I. C. AND ETUS, I., 2015 Automated Teller Machine (ATM) Adoption and Diffusion Theory in Selected Banks in Owerri, Imo State, Nigeria. *University of Mauritius Research Journal, Vol. 21, pp 595-615*

AUDI, M. F., WAHBI, M., ABDALLAH, S., KASSEM, L., JABER, N., and MAKKAWI, R., 2016 Adoption of Mobile Banking Applications in Lebanon. *Journal of Internet Banking and Commerce vol. 21, No. 1. pp 1-15.*

AUTA, E. M., 2010 E-Banking in Developing Economy: Empirical Evidence from Nigeria *Journal of Applied Quantitative Methods Vol. 5 No.2, pp 212-222.*

AYO, C. K., 2006. The Prospects of e-Commerce Implementation in Nigeria, *Journal of Internet Banking and commerce*, *Vol.11. No 3, pp 1-8.*

AYO, C. K., 2010. The State of e-Banking Implementation in Nigeria: A Post-Consolidation Review. Journal of Emerging Trends in Economics and Management Sciences (JETMS) Vol.1 (1) pp37-45

AYO, C. K., ADEWOYE J. O, AND ONI A. A., 2010. The State of e-Banking Implementation in Nigeria: A Post-Consolidation Review. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS) Vol.1 (1): 37-45*

B`ATIZ-LAZO, B. AND WOOD, D., 2000, in Lenk, K., Traunmueller, R., Schmid, B. F., Pavlikova, L. (Eds). *A Historical Appraisal of Information Technology in Commercial Banking, EM – eGovernment*

B`ATIZ-LAZO B. AND WOOD, D., 2002, A Historical Appraisal of Information Technology in Commercial Banking, *Electronic Markets, Vol. 12 Issue 3 Pp. 12*

BABBIE, E., 2010. *The Practice of Social Research*. Wadsworth Cengage Learning. USA

BAKER, T.L., 1994. *Doing Social Research* (2nd Ed.), New York: McGraw-Hill Inc.

BANK OF ENGLAND QUARTERLY BULLETIN, (BEQB) 1983 Competition, Innovation and Regulation in British banking [Online] http://www.bankofengland.co.uk/archive/Documents/historicpubs/qb/1983/qb83q3363376.pdf [Accessed 13/01/2014].

BANKOLE, F. O., BANKOLE, O. O., AND BROWN, I., 2011 Mobile Banking Adoption In Nigeria *The Electronic Journal on Information Systems in Developing Countries Vol. 47, (2) pp1-23*

BARROS, C. P. AND CAPORALE, G. M., 2012, Banking Consolidation in Nigeria, 2000-2010. *Economics and Finance Working Paper Series* [Online] http://www.brunel.ac.uk/__data/assets/pdf_file/0017/163250/1206.pdf. [Accessed 10/03/2013]

BEAVERS, A. S., LOUNSBURY, J. W., RICHARDS, J. K., HUCK, S. W., SKOLITS, G. J. & ESQUIVEL, S. L. 2013. Practical Considerations for Using Exploratory Factor Analysis in Educational Research. Practical Assessment, Research & Evaluation, 18(6). [Online] http://pareonline.net/getvn.asp?v=18&n=6. [Accessed 01/07/16]

BERTHOUD, R., 2000 "A measure of changing Health" in Berthoud, R. and Gershuny. J (eds), Seven years in the lives of British Families: Evidence on Dynamics of Social Change from the British Household Panel Survey. Bristol: Policy Press

BERTRAM, D., 2009 Likert Scales. [Online] http://poincare.matf.bg.ac.rs/~kristina/topic-dane-likert.pdf [Accessed 29/06/16]

BLACK, T., 2000 *Evaluating Social Science Research: An Introduction.*London: SAGE publications Ltd

BLUT, M., FRENNEA, C. M., MITTAL, V. AND MOTHERSBAUGH, D. L., 2015. How Procedural, Financial and Relational Switching Costs Affect Customer Satisfaction, Repurchase Intentions, and Repurchase Behavior: A Meta-Analysis. International Journal of Research in Marketing. (Online) http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2553402. [Accessed 23/09/16]

BOB TELEPHONE FILES 2013, UK Telephone History. [Online] http://www.britishtelephones.com/histuk.htm [Accessed 19/04/2014]

BOJUWON1, M, 2015 Exploring the Difficulties in Internet Banking Usage: The Case of Selected Nigerian Banks. [Online] http://journals.univ-danubius.ro/index.php/jam/article/view/2852/2967 [Accessed 13/06/2016]

BRANNEN, J. (2005) NCRM Methods Review Papers, NCRM/005. Mixed Methods Research: A discussion paper. Discussion Paper. [Online] http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=11&ved=0ahUKEwjJy52R6HJAhUBQSYKHQqADDI4ChAWCBswAA&url=http%3A%2F%2Feprints.ncrm.ac.uk%2F89%2F1%2FMethodsReviewPaperNCRM005.pdf&usg=AFQjCNHOUrwHD2duOcF_bTzQfDmucRR95w [Accessed 17/12/2015]

BRAUN, V. AND CLARKE, V., 2013. *Successful Qualitative Research: a practical guide for beginners.* London: Sage

BRAUN, V. AND CLARKE, V., 2006 using thematic analysis in psychology Qualitative *Research in Psychology*, 3 (2) pp. 77-101

BRITISH BROADCASTING CORPORATION (BBC), 2015 Nigeria fuel shortage cripples businesses, banks and flights. [Online] http://www.bbc.co.uk/news/world-africa-32873349. [Accessed, 30/08/16].

BROWN, I., ZAHEEDA, C., DOUGLAS, D. AND STROEBEL, S., 2003 Mobile phone banking in South Africa - an Exploratory Study *International Journal of Information Management, Vol. 23 pp 381-394*

BROWN, S.A. AND VENKATESH, V. 2005. Model of Adoption of Technology in the Household: A Baseline Model Test and Extension Incorporating Household Life Cycle," *MIS Quarterly Vol.29 Issue 4, pp 399-426.*

BRYMAN, A. AND CRAMER, D. 2004 "Constructing Variables" in Hardy, M. and Bryman, A., Handbook on data analysis. London: Sage

BRYMAN, A., 2012 *Social Research Methods*, New York: Oxford University Press

BRYMAN, A., 2016 Social Research Methods United Kingdom: Oxford University Press

BUCKLE, M. AND THOMPSON J. L., 1992. *The United Kingdom Financial System in Transition: Theory and Practice*. Manchester: Manchester University Press

BUDINA, N. AND PANG, G. 2007. Nigeria's Growth Record: Dutch Disease or Debt Overhang? World Bank Policy Research Working Paper 4256, [Online] http://siteresources.worldbank.org/INTDEBTDEPT/Resources/468980-1207588563500/4864698-1207588597197/wps4256.pdf [Accessed 03/08/2016]

BUREAU OF PUBLIC ENTERPRISES (B.P.E). Nigeria 2009. *Privatization* [Online] http://www.bpeng.org/pages/default.aspx [Accessed 05/04/ 2011]

BURNHAM, T.A., FRELS, J.K. AND MAHAJAN, V. 2003. Consumer Switching Costs: A Typology, Antecedents and Consequences *Journal of the Academy of Marketing Science April 2003 31: 109-126*

BURR, W., 1996 in Ojeka, S. A. and Ikpefan, O. A. 2011 Electronic Commerce, Automation and Online Banking in Nigeria: Challenges and Benefits. *Iranian Journal of Management Studies (IJMS) Vol.4 No. 2 pp 29-52*

BUSINESSDICTIONARY.COM 2014 [Online] http://www.businessdictionary.com/definition/cost.html [Accessed 26/07/2014]

CALDER, J., 1996 "Statistical Techniques" in Sapsford, R. and Jupp, V., Data Collection and Analysis London: SAGE publications Ltd.

CAPIE, F. H., TSOMOCOS, D. P AND WOOD, G. E. 2003. E-barter versus fiat money: will central banks survive? [Online] http://www.bankofengland.co.uk/archive/Documents/historicpubs/workingpapers/2003/wp197.pdf [Accessed 02/08/2016]

CECCAGNOLI, M. AND ROTHAERMEL, F. T., 2008 Appropriating the Returns from Innovation Technological Innovation: Generating Economic Results Advances in the Study of Entrepreneurship, Innovation and Economic Growth, Volume 18, pp.11–34

CENTRAL BANK OF NIGERIA (CBN) (2011) New Cash Policy Engagement Session: Cashless Lagos Implementation [Online] http://www.cenbank.org/cashless/Cashless%20Lagos%20Presentation_November.pdf [Accessed 12/10/2013].

CENTRAL BANK OF NIGERIA (CBN) 2008 Banking Consolidation [Online] www.cenbank.org [Accessed 05/04/2014]

CENTRAL BANK OF NIGERIA (CBN) 2013 Payments system Vision 2020 [Online] http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&ved=0CEgQFjAC&url=http%3A%2F%2Fwww.cbn.gov.ng%2Ficps2013%2Fpapers%2FNIGERIA_PAYMENTS_SYSTEM_VISION_2020%5Bv2%5D.pdf&ei=pHM5U7X0CsKL0AXF84GYDw&usg=AFQjCNEsnH-hNal67qr1OG9Yjt9JEaxFqA [Accessed 05/04/3/2014]

CENTRAL BANK OF NIGERIA (CBN), 2015. Why the Central Bank of Nigeria made the Cash-less Policy. [Online] https://www.cbn.gov.ng/cashless/Cash-Less%20FAQs.pdf [Accessed 5/20/2016]

CHAFFEY, D. ELLIS-CHADWICK, F., JOHNSTON, K. I. AND MAYER, R., 2006 *Internet Marketing - Strategy, Implementation and Practice* London: Prentice Hall

CHANNON, D.F., 1986. *Bank Strategic Management and Marketing* Singapore: Wile

CHATTERJEE, R., 2013. Breaking the Mold: An Educational Perspective on Diffusion of Innovation/Rogers' Diffusion of Innovations. [Online] https://en.wikibooks.org/wiki/Breaking_the_Mold:_An_Educational_Perspective_on_Diffusion _of_Innovation/Rogers%E2%80%99_Diffusion_of_Innovations [Accessed 10/10/2016]

CHEN, S., LI, S. AND LI, C., 2011 Recent Related Research in Technology Acceptance Model: A Literature Review Australian Journal of Business and Management Research Vol.1 No.9 pp. 124-127

CHIDOZIE, F. C., LAWAL, P. O. AND AJAYI, O. O., 2015 Deregulation of the Nigerian Telecommunication Sector: Interrogating the Nexus between Imperialism and Development *Academic Journal of Interdisciplinary Studies Vol 4 No 1, pp 173-184.*

CHIEMEKE, S. C., EVWIEKPAEFE, A. E. AND CHETE, F. O., 2006 The Adoption of Internet Banking in Nigeria: An Empirical Investigation. Journal of Internet Banking and Commerce, Vol.11 No.3, pp 1-9.

CHUTTUR, M. M. 2009. Overview of the Technology Acceptance Model: Origins, Developments and Future Directions. Sprouts: Working Papers on Information Systems, 9(37). Pp 1-21.

CHWELOS, P., BENBASAT, I. AND DEXTER, A. S. 2001 'Empirical Test of an EDI Adoption Model', Information Systems Research Vol. 12 (3): pp 304–21

CLAESSENS, S. T. G. AND KLINGEBIEL, D., 2001,'E-Finance in Emerging Markets: Is Leapfrogging Possible? *World Bank Financial Sector Discussion Paper No. 7, pp 1-91*

CLARKE, R. J., 2005, Research Models and Methodologies, [Online] http://www.uow.edu.au/content/groups/public/@web/@commerce/documents/doc/uow012042. pdf. [Accessed 29/01/2013]

COLLIS AND HUSSEY, 2003 *Business Research: a practical guide for undergraduate and postgraduate students*, Basingstoke: Palgrave Macmillan

COLUMBUS, O. 2014 African Cultural Values and Inter-Communal Relations: The Case with Nigeria Developing Country Studies. Vol.4, No.24, pp 208-217.

CONNECT NIGERIS.COM 2015. Union Bank Unveils "Activate & Win" Promo. [Online] http://connectnigeria.com/articles/2015/08/union-bank-unveils-activate-win-promo/. [Accessed 29/09/2016]

CONSOLI, D., 2005a. The dynamics of technological change in UK retail banking services: An evolutionary perspective *Research Policy Vol.34 pp.461–480*

CONSOLI, D., 2005b. Technological cooperation and product substitution in UK retail banking: the case of customer services. *Information Economics and Policy Vol.17 (2), pp199–215*

CONSUMER PROTECTION ACT (UK) 1987 [Online] http://www.legislation.gov.uk/ukpga/1987/43 [Accessed 14/04/2014]

CRESWELL, J. W., 2013a. Steps in Conducting a Scholarly Mixed Methods Study. DBER Speaker Series. Paper 48. [Online] http://digitalcommons.unl.edu/dberspeakers/48 [Accessed 13/11/2015]

CRESWELL, J. W., 2013b Qualitative Inquiry and Research Design: Choosing Among Five Approaches. USA: SAGE publications Ltd CAMERON G., *1998* Monetary Policy in the UK since the Second World War, Oxford University Press

CRESWELL, J. W., 2014 Research Design: Qualitative, Quantitative and Mixed Methods Approaches – The International Student Edition, London: Sage

CRONBACH, L. J., AND MEEHL, P. E. 1955 Construct Validity in Psychological Tests *Psychological Bulletin,* Vol. 52 pp. 281-302. (Online) http://www.ufrgs.br/psico-laboratorio/textos_classicos_5.pdf [Accessed 01/06/2016]

CUDJOE, A. G., ANIM, P. A. AND NYANYOFIO, J.G., 2015 Determinants of Mobile Banking Adoption in the Ghanaian Banking Industry: A Case of Access Bank Ghana Limited. Journal of Computer and Communications, 3, pp1-19.

DANIEL, E., 1999 Provision of electronic banking in the UK and the Republic of Ireland, *International Journal of Bank Marketing, Vol. 17 No. 2, pp. 72-82.*

DAVID, P. A., 2006 Path Dependence – A foundational Concept for Historical Social Science. [Online] http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CCY QFjAA&url=http%3A%2F%2Fecohist.history.ox.ac.uk%2Freadings%2Fdavid-pathdependent206.pdf&ei=bVoDVKnYNIjkaOfMgZgO&usg=AFQjCNGtZZLcYj-qYwIeTEjHKfH-VQIRWw [Accessed 28/07/2014]

DAVIES, M. AND HUGHES. N., 2014 *Doing A Successful Research Projects, Using Qualitative or Quantitative Methods,* UK: Palgrave Macmillan

DAVIES, R., RICHARDSON, P., KATINAITE, V., AND MANNING, M., 2010, Evolution of the UK banking system, Research and analysis *quarterly bulletin, Q4, pp 321-332.*

DAVIS, F, BAGOZZI R, AND WARSHAW P., 1989. User acceptance of computer technology: A comparison of two theoretical models. *Management Science [serial online], 35(8), pp.982-1003.*

DAVIS, F.D., 1989, Perceived Usefulness, Perceived Ease of Use and User of Acceptance of Information Technology, *MIS Quarterly, Vol. 3 No. 3, pp. 319-40.*

DAWODU, B. F. AND OSONDU, M. C., 2013, Adoption of Automated Teller Machine in Nigerian Banks: Use Enhancements and Limitations, *International Journal of Computer Science and Mobile Computing Vol.2 Issue. 8, pg. 14-23.*

DeCOSTER, J., 2000 Scale Construction Notes. [Online] http://www.stat-help.com/scale_20100316.pdf. [Accessed 13/06/2016]

DEMIRGUC-KUNT, A., LEORA, K., DOROTHE, S., AND PETER VAN, V. 2015. "The Global Findex Database 2014: Measuring Financial Inclusion around the World." Policy Research Working Paper 7255, World Bank, Washington, DC. [Online] http://www.worldbank.org/content/dam/Worldbank/Research/GlobalFindex/PDF/N2Unbanked.pdf. [Accessed 19/08/2016]

DENHAM, B. E., 2010 measurement of risk perception in social research: a comparative analysis of ordinary least squares, ordinal and multinomial logistics regression models. *Journal of Risk Research, Vol. 13 No. 5, pp. 571-589*

DHURGHAM, T. AND HARIRI, M., 2012 User Acceptance of Biometrics in E-banking to Improve Security *Business Management Dynamics Vol.2, No.1, pp 01-04*

DIENER E., AND CRANDALL, R., 1978 Ethics in social and behavioural research. Chicago: University of Chicago Press

DODE, R. O., 2010 Y Yar'adua 7-Point Agenda, the Mdgs and Sustainable Development in Nigeria. *Global Journal of Human Social Science Vol. 10 Issue 4, pp 2-8.*

DONWA, P. AND ODIA, J., 2011 Effects of the Consolidation of the Banking Industry on the Nigerian Capital Market J Economics Vol.2 (1) pp 57-65

DRAGOS, P. DANIELA, B., AND SIMONA, M., 2013 *Electronic banking – advantages for financial services delivery* [Online] https://www.academia.edu/2635617/ELECTRONIC_BANKING_-_ADVANTAGES_FOR_FINANCIAL_SERVICES_DELIVERY [Accessed 08/01/2014)

DREW, W AND ROSENTHAL, R. 2003. Quantifying construct validity: Two simple measures. Journal of Personality and Social Psychology Vol.84, no. 3: 608-618. [Online] https://dash.harvard.edu/bitstream/handle/1/3708469/Rosenthal_QuantifyingConstruct.pdf?sequence=1 [Accessed 01/06/2016]

EAGLY, A.H. AND CHAIKEN, S. 1993. The Psychology of Attitudes. Fort Worth, TX: Harcourt Brace Jovanovich.

EASTERLY, W., 2001. *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics*. Cambridge: MIT Press.

ENCOMIUM, 2014 Nigerians emerge heaviest ATM users in Africa. [Online] http://encomium.ng/nigerians-emerge-heaviest-atm-users-in-africa/ [Accessed 27/07/16]

ENNEW, C. T., WRIGHT, M. AND WATKINS, T. 1990, New Competition in Financial Services. *Long Range Planning Vol.23 No.3 pp. 80-90.*

ERHAGBE, E., 2012 Ethnicity in the Matrix of Peace and Reconciliation in Nigeria *European Scientific Journal. Vol. 8, No.16*

EWA, K. E. AND INAH, E. U, 2016 Evaluating Nigeria Cashless Policy Implementation. *International Journal of Business and Social Research Volume 6, Issue 5, pp 17-27.*

EZE, U. C., YAW, L. H., MANYEKI, J. K. AND HAR, L. C., 2011 Factors Affecting Internet Banking Adoption among Young Adults: Evidence from Malaysia 2011 International Conference on Social Science and Humanity IPEDR. Vol.5

FACTA VERA, 2011 Comparing Paper vs. Electronic Transactions [Online] http://www.factavera.com/whitepapers/paper_vs_electronic_processing.php [Accessed 09/01/2014]

FERKETICH, S. 1991. Focus on psychometrics. Aspects of item analysis. Research in Nursing & Health, 14(2), 165–168.

FERLIE, E., PETTIGREW, A., ASHBURNER, L. AND FITZGERALD, L., 1996 *The New Public Management*, Oxford: Oxford University Press.

FIELD, A. P., 2005. Discovering Statistics Using SPSS. London: Sage.

FIELD, A.P., 2013. Discovering statistics using IBM SPSS statistics: and sex and drugs and rock 'n' roll. London: SAGE publications Ltd

FIELDING, N. G AND LEE, R.M. 1998 Computer Analysis and Qualitative Research. London: Sage

FILL, C. 2005. Marking Communication: Engagement, Strategies and Practice. Prentice-Hall: Essex

FISHBEIN, M. AND AJZEN, I., 1975. Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research. Reading, MA: Addison-Wesey.

FITRIANTO, A. AND GHAZAB, M. I. A, 2014 Modelling Employment Rate Using Ordinal Logistic Regression. Middle-East Journal of Scientific Research 20 (12) pp. 1715 – 1720

FOON, Y.S. AND FAH, B.C.Y., 2011 Internet banking adoption in Kuala Lumpur: An application of UTAUT model, *International Journal of Business and Management,* Vol. 6, No. 4 pp: 161-167

FRANK, K. 2000. Impact of a Confounding Variable on the Inference of a Regression Coefficient. Sociological Methods and Research, 29(2), 147-194.

FRANKFORT-NACHMIAS AND NACHMIAS, 2008. Research Methods in the Social Sciences. USA: Worth Publisher

FRAZER, P., VITTAS, D., 1982. *The Retail Banking Revolution: an International Perspective.* London: Michael Lafferty Publications

GARDNER, J. A., 2011 The Future Proof Bank: A Practical Guide to Doing Different Business-as-Usual. UK: Wiley

GARSON, D. G., 2012 Testing Statistical Assumptions. [Online] http://www.statisticalassociates.com/assumptions.pdf [Accessed 29/06/16].

GÁSPÁR, T., 2011 Path Dependency and Path Creation in a Strategic Perspective Journal of Futures Studies 15(4) pp 93-108. [Online] http://www.jfs.tku.edu.tw/15-4/A07.pdf. [Accessed 26/07/2016]

GAYAWAN, E. AND TURRA, C., 2015. Mapping the determinants of child mortality in Nigeria: estimates from mortality index. African Geographical Review, Vol. 34 Issue: 3, pp. 269-293,

GBADEYAN, R. A. AND GBONDA, O. O., 2011 Customers' Preference for E-Banking Services: A case Study of Selected banks in Sierra Leone, Australian Journal of Business and Management Research, Vol.1 No.4 pg. 108-116

GEFEN, D. AND STRAUB, D. 2000. The Relative Importance of Perceived Ease Of Use In IS Adoption: A Study Of E-Commerce Adoption. Journal of the Association for Information Systems, 1(8).

GIBBS, G. R., 2007 Analysing Qualitative dat. The sage Qualitative Research Kit. London: Sage.

GIDDENS A., 1990. The Consequences of Modernity, Cambridge: Polity Press

GILANINIA, S., FATTAHI, A. AND MOUSAVIAN, S. J.; 2011 Behavioral Factors Tend to Use the Internet Banking Services Case Study: System (SABA), the Melli Bank, Iran, Ardabil International Journal of Business Administration Vol. 2, No. 3; pp 173-179

GOUWS, T. AND OUDTSHOORN, P. R., 2011 Correlation between Brand Longevity and the Diffusion of Innovation Theory. Journal of Public affairs Vol. 11 No. 4. pp. 236 – 242

GOSS K. F., 1979 Consequences of Diffusion of Innovation to Rural Population. Rural Sociology issue 44 pp 754-772

GOYAL, V., PANDEY, U. S., AND BATRA, S., 2012, Mobile Banking in India: Practices, Challenges and Security Issues, International Journal of Advanced Trends in Computer Science and Engineering Volume 1, No.2, pp 56-66.

GREENE, W. H., 2000. Econometric Analysis. Upper Saddle River, NJ: Prentice-Hall

GROENEWEG, J AND KAR, E., 2007, A Service System Design Approach for ITV Banking [Online] http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=3&ved=0CC0 QFjAC&url=http%3A%2F%2Fdl.acm.org%2Fft_gateway.cfm%3Fid%3D1282169&ei=R3wE VLbPBcSb0QXLyoCoCQ&usg=AFQjCNEFpBk_pkrcfEJkZZQ0Zqi-gB2aUg. [Accessed 01/09/2014].

GUBA, E. G. AND LINCOLN, Y. S., 1994 Competing Paradigms in Qualitative Research, in N. K. Denzin and Y. S. Lincoln (eds.) Handbook of Qualitative Research, pp. 105–17. Thousand Oaks, CA: Sage.

HAIDER, M and GARY L. KREPS, G. L., 2004. Forty Years of Diffusion of Innovations: Utility and Value in Public Health. *Journal of Health Communication, Volume 9: pp.3–11.*

HALE, J. L., HOUSEHOLDER, B. J. AND GREENE, K. L., 2002. Theory of Reasoned Action in Dillard J. P and Shen, L 2002. The Persuasion Handbook: Development in Theory and Practice. London: Sage

HARDEN, G., 2002 E-banking comes to town: Exploring how traditional UK high street banks are meeting the challenge of technology and virtual relationships. *Journal of Financial Services Marketing Vol. 6, (4) pp323–332*

HARDING, J., 2013.Qualitative Data Analysis from start to finish. London: SAGE publications Ltd

HARRIS, C. R. AND JENKINS, M., 2006. Gender Differences in Risk Assessment: Why do Women Taken Fewer Risks than Men? *Judgment and Decision Making, Vol. 1, No. 1, pp. 48–63*

HARUNA, M. A., 2012. Analysis of Value Creation of Electronic Banking in Nigeria International Journal of Advanced Research in IT and Engineering Vol. 1, No. 2, pp 29-46.

HASAN, M. S. AND TAGHAVI, M, 2002 Residential Investment, Macroeconomic Activity and Financial Deregulation in the UK: An Empirical Investigation *Journal of Economics and Business Vol. 54 (2002) pp447–462*

HERITAGE BANK, 2015 *The Timeless Wealth Journey* [Online] http://www.hbng.com/the-timeless-wealth-journey/ [Accessed 09/02/2016]

HESSE-BIBER, S.N. AND LEAVY, P., 2006. *The Practice of Qualitative Research*. London: Sage publication

HILDRETH, R., 2001. The History of Bank: To which is added a Demonstration of the Advantages and Necessity of Free Competition in The Business of Banking. Canada: Batoche Books Limited.

HILL, M., 2007 SPSS Missing Value Analysis ™ 7.5. [Online] http://priede.bf.lu.lv/grozs/Datorlietas/SPSS/SPSS%20Missing%20Value%20Analysis%207.5.pdf [Accessed 31/05/2016].

HOGARTH, J. M. AND ANGUELOV, C. E., 2004 Are Families Who Use E-Banking Better Financial Managers? *Financial Counselling and Planning, Volume 15 (2), pp 61-77.*

HOWCROFT, B., HAMILTON, R., AND HEWER, P., 2002, Consumer attitude and the usage and adoption of home-based banking in the United Kingdom. *International Journal of Bank Marketing, Vol. 20 (3) pp.111 – 121.*

HU, P. J., CHAU, P. Y. K., LIU SHENG, O. R., AND YAN TAM, K., 1999. Examining the technology acceptance model using physician Acceptance of telemedicine technology, *Journal of Management Information Systems, 16 (2), pp. 91–112.*

HUGHES, T., 2001, Market Orientation and the response of UK financial services companies to the changes in market conditions as a result of e-commerce, *International Journal of Bank Marketing Vol. 19 No.6 pp 222-231*

HUGHES, O. E., 2003. *Public Management and Administration: An Introduction*. New York: Palgrave Macmillan.

IBM CORPORATION (2012) Ordinal Regression [Online] http://xaprod70:38402/help/index.jsp?topic=/com.ibm.spss.statistics.cs/plum_table.htm [Accessed 27/06/16]

IBRAHIM, S. S., MOHAMMED, B. S., AND GANI I. M., 2012 Recapitalization and Bank Performance: Evidence from Banks in Nigeria. *International Journal of Marketing and Technology Vol.2. Issue 3, pp 26-36.*

IDOWU, P., CORNFORD, D. AND BASTIN, L. 2008. Health informatics deployment in Nigeria *Journal of Health Informatics in Developing Countries, Vol. 2, pp.15-23*

IKPEFAN, O. A., 2010. Bank Consolidation/ Capitalization in the Nigerian commercial Bank (1986-2006): causes, consequences and implication for the future. Manager Journal of Information Management. No 2, pp 54-71.

INTERNET LIVE 2016, Elaboration of data by International Telecommunication Union (ITU), World Bank, and United Nations Population Division. [Online] http://www.internetlivestats.com/internet-users/nigeria/ [Accessed 03/08/2016]

JAYAWARDHENA, C. AND FOLEY, P., 2000 Changes in the banking sector – the case of Internet banking in the UK *Internet Research, Vol. 10 Issues: 1, pp.19 – 31*

JIMMIESON, N. L., PEACH, M. AND WHITE, K. M. 2008 Utilizing the Theory of Planned Behaviour to inform change management: An investigation of employee intentions to support organizational change. *Journal of Applied Behavioural Science 44(2), pp. 237-262.*

JOHNSON, R. B., ONWUEGBUZIE. A. J. AND TURNER, L. A. (2007) [Online] http://mmr.sagepub.com/cgi/content/abstract/1/2/112 [Accessed 12/18/2015]

JOSEPH, M., SEKHON, Y., STONE, G., AND TINSON, J., 2005. An exploratory study on the use of banking technology in the UK: A ranking of Importance of Selected technology on consumer perception of services delivery performance. *International Journal of Bank Marketing, Vol. 23 No.5, 2005 pp 397-413*

JUDD, C. M., SMITH, E. R. AND KIDDER, L. H. 1991. Research methods in social relations. Fort Worth: Holt, Rinehart, and Winston.

KARIMZADI, S., 2013. Money and its origin. New York: Routledge

KAUR, R., 2013. The impact of electronic banking on banking transactions: a cost benefit analysis, *The IUJ journal of bank management Vol. XII, No. 2*

KHAN, A. AND WOOLSEY, J. 2011. Comparison of Contemporary Technology Acceptance Models and Evaluation of the Best Fit for Health Industry *Organizations M IJCSET |December 2011 | Vol 1, Issue 11, pp 709-717*

KIANG, M.Y., RAGHU, T.S., HUEU-MIN SHANG, K., 2000. Marketing on the Internet – who can benefit from an online marketing approach? *Decision Support Systems, Vol. 27 No.4, pp.383 – 93*

KPMG, 2013. Banking Industry Customer Satisfaction Survey issue 7

KRAFT, P., RISE, J., SUTTON, S AND RØYSAMB, E., 2005 Perceived Difficulty in the Theory of Planned Behaviour: Perceived Behavioural Control or Affective Attitude? *British Journal of Social Psychology Vol. 44, Pp. 479–496*

KRAUSS, S. R., 2005, Research Paradigm and Meaning Making: A Primer, *The Qualitative Report 10(4), 758-770* [Online] http://nsuworks.nova.edu/tqr/vol10/iss4/7/ [*Accessed,* 12/11/2013]

KUHN, T., 1962. *The Structure of Scientific Revolutions.* Chicago: University of Chicago press

LEADERSHIP NEWSPAPER, 2014, *12,000 Nigerian ATMs at Risk as Cost of Operation Rises* [Online] http://leadership.ng/business/364390/12000-nigerian-atms-risk-cost-operation-rises [Accessed 10/07/2013]

LEE, M., 2009 Factors Influencing the Adoption of Internet Banking: An Integration of TAM and TPB with Perceived Risks and Perceived Benefit. *Electronic Commerce Research and Applications Vol. 8 pp. 130-141.*

LEGRIS, P., INGHAM, J., AND COLLERETTE, P., 2003. Why Do People Use Information Technology? A Critical Review of the Technology Acceptance Model. *Information & Management, 40(3), pp 191*

LI, L., 2010 A Critical review of technology Acceptance Literature. [Online] http://www.swdsi.org/swdsi2010/sw2010_preceedings/papers/pa104.pdf. [Accessed 22/08/16].

LICHTENSTEIN, S. AND WILLIAMSTON, K., 2006 understanding customers' adoption in internet banking: an interpretative study in the Austrian banking context. *Journal of electronic commerce research Vol.7 No. 2 pp 50-66*

LIN, H., 2007, The Strategies of International E-Finance under Basel II: A complementary Assets Approach. *Journal of Internet Banking and Commerce Vol. 12 Issues 3 pp. 1-10*

LINCOLN, Y. S. AND GUBA, E. G., 1985. Naturalistic Inquiry. London: Sage

LLEWELLYN, D.T., 1985. The changing structure of the UK financial system, *The Three Banks Review 145, pp19–34*

LLEWELLYN, D.T., 1996. *Banking in the 21st Century: the transformation of an industry*, [Online]
http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CCw
QFjAA&url=http%3A%2F%2Fciteseerx.ist.psu.edu%2Fviewdoc%2Fdownload%3Fdoi%3D10.
1.1.200.8615%26rep%3Drep1%26type%3Dpdf&ei=bqJGU-
joMuOO0AXwpYHQDg&usg=AFQjCNH6jS02MmjCQ2zFUMTWATN-
45uL6Q&bvm=bv.64507335,d.d2k [Accessed 10/04/2014].

MADDEN, N., 1994, Future Branch Mortgage *Finance, February, pp 41 -43*

MAIYAK, A. A. AND MOKHTAR, S. S. M., 2012 Determinants of Customer Behavioural Responses: A Pilot Study. International Business Research Vol. 4, No. 1.

MALHOTRA, P., AND SINGH, B., 2007 Determinants of Internet banking Adoption by Banks in India, *Internet Research, Vol.17 (3), pp.323 – 339*

MANDELL, L., 1990. The Credit Card Industry: a history. Boston: Twayne Publishers

MANORANJAN, D. M, PRADHAN, B. B. AND SNIGDHA, S., 2014 Determinants of Customers' Adoption of Mobile Banking: An Empirical Study by Integrating Diffusion of Innovation with Attitude. *Journal of Internet Banking and Commerce, Vol. 19, No.3 pp 1-21.*

MANN, B. J. S. AND SAHNI, S. K., 2012 Profiling Adopter categories of Internet Banking in India: Am empirical study. *Vision Vol. 16 Issue No. 4 pp 283 -295*

MARCHEWKA, J. T., LIU, C. AND KOSTIWA, K. 2007. An Application of the UTAUT Model for Understanding Student Perceptions Using Course Management Software. *Communications of the IIMA Volume 7 Issue 2, pp 93-104*

MASROM, M., 2007 Technology Acceptance Model and E-learning. 12th International Conference on Education 21-24 May, Sultan Hassanal Bolkiah Institute of Education. [Online] https://core.ac.uk/download/pdf/11781654.pdf. [Accessed 01/09/16]

MATHERS, N, FOX N., AND HUNN, A. Surveys and Questionnaires. The NIHR RDS for the East Midlands / Yorkshire & the Humber, 2007

MCCARTHY, R. V., ARONSON, J. E., AND PETRAUSCH, R. 2004. Building Relationships That Last: Integrating Public Relations into Web Design. Journal of International Technology and Information Management, 13(1), pp 1-12.

McLEOD, S. A. 2014. Questionnaires. [Online] www.simplypsychology.org/questionnaires.html [Accessed 13/06/2016]

MCLEOD, S. A., 2008. Likert Scale. [Online] www.simplypsychology.org/likert-scale.html [Accessed 12/18/2015]

McNABB, D. E. 2002. *Research Methods in Public Administration and Non-profit Management: Quantitative and Qualitative Approaches*. London: M.E Sharpe Inc.

MELNICK, E., NAYYAR, P., PINEDO, M., AND SESHADRI, S., 2000 Creating Value in financial services: strategies, operations and technologies, Kluwer Academic Publisher.

MERTENS, D. A., 2010. Research and evaluation in education and psychology Thousand Oaks, CA: Sage.

MOHAMMED, I. D. AND DADA, R. M., 2014 An Empirical Investigation of Automated Teller Machines (ATMs) and Customers' Satisfaction in Nigeria: A case study of Ilorin, Kwara State. *MPRA Paper No. 59757*, Available online at https://mpra.ub.uni-muenchen.de/59757/1/MPRA_paper_59757.pdf. Accessed 11/08/16

MOLS, N. BUKH, P. AND NEILSEN, J., 1999, Distribution Channel Strategies in Danish Retail Banking, *International Journal of Bank Marketing, Vol. 27 No.1 pp. 37-47*

MOORE, G.C. AND BENBASAT, I. 1991. Development of an Instrument to Measure the Perception of Adopting an Information Technology Innovation, *Information Management Research Vol.2 No. 3 pp.192-222*

MORGAN, L. D., 2014 *Integrating Qualitative and Quantitative Methods: A pragmatic Approach*, USA: SAGE publications Ltd

MORRIS, T., 1986 *Innovations in Banking*, London: Croon Helm

NAGELKERKE, N. J. D. 1991 Miscellanea A note on a general definition of the coefficient of determination. Biomerrika , 78, 3, pp. 691-692 [Online] http://www.cesarzamudio.com/uploads/1/7/9/1/17916581/nagelkerke_n.j.d._1991_-_a_note_on_a_general_definition_of_the_coefficient_of_determination.pdf. [Accessed 27/06/2016]

NASRI, W. AND ZARAI, M., 2014 Empirical Analysis of Internet Banking Adoption in Tunisia *Asian Economic and Financial Review, Vol. 4 Issue 12, pp 1812-1825.*

NATIONAL BUREAU OF STATISTICS, 2011 [Online] http://siteresources.worldbank.org/INTSURAGRI/Resources/7420178-1294259038276/NigeriaNBS_FinanceBrief.pdf [Accessed 08/07/16]

NATIONAL COMMUNICATIONS COMMISSION (NC) NIGERIA 2013. *Quarterly Summary of Telecoms subscribers in Nigeria (December 2012 – Sept 2013)* [Online] http://www.ncc.gov.ng/index.php?option=com_content&view=article&id=68:art-statistics-industry&catid=65:cat-web-statistics&Itemid=70 [Accessed 14/02/2014]

NATIONAL COMMUNICATIONS COMMISSION (NCC) NIGERIA, 2013, *Monthly Subscriber Data (July 2012 –September 2013)* [Online] http://www.ncc.gov.ng/index.php?option=com_content&view=article&id=68:art-statistics-industry&catid=65:cat-web-statistics&Itemid=70 [Accessed 14/02/2014]

NATIONAL MIRROR NEWSPAPER October 1, 2012 available online athttp://nationalmirroronline.net/new/telecoms-nigerias-teledensity-hits-75-17/ [Accessed 14/02/2014].

NELLIS, J. AND LOCKHART, T., 1995, The impact of deregulation on the UK building Society branch network in the 1990s, *International Journal of Bank Marketing Vol. 13 No.4 1995 pp 5-11*

NEUMAN, L.W., 2006. *Social Research Methods: Qualitative and Quantitative Approaches*. Boston: Pearson

NICULESCU-ARON, I., 2013 Using Ordinal Regression Modelling to Evaluate the Financial Potential of Households. [Online] http://www.ecocyb.ase.ro/nr42013pdf/Ileana%20Niculescu%20Aron%20%28T%29.pdf [Accessed 01/07/2016]

NORUSIS, M. J., 2005 SPSS 14.0 *Advanced Statistical Procedures Companion*. Upper Saddle River: Prentice Hall Inc.

NWANKWO, G.O, 1989. *The Role of Banks in the Nigerian Economy* in Ogwu,U, J, and Olaniyan, R.O., eds., Nigeria's International Economic Relations: Dimensions of Dependence and Change. Barclays is the predecessor to the current Union Bank of Nigeria.

NWUDE, E. C., 2013, The Politics of Minimum Wage in Nigeria: The Unresolved Issues *Asian Journal of Empirical Research3(4):477.*

OBE, O. O. AND BALOGUN, V. F., 2007 Practice, Trends and Challenges of Mobile Commerce in Nigeria, *Information Technology Journal 6 (3) pp 448-456*

ODEJIMI, D. O and ODEJIMI, M. O, 2015. The Impact of Trade Liberalisation on The Nigerian Labour Market *International Journal of Economics, Commerce and Management Vol. III, Issue 4*

ODUMERU, J.A 2012, The Acceptance of E-banking by Customers in Nigeria, *World Review of Business Research, vol. 2. No. 2. pp. 62 – 74.*

ODUMERU, J. A., 2013 Going Cashless: Adoption of Mobile Banking in Nigeria Arabian *Journal of Business and Management Review (Nigerian Chapter) Vol. 1, No. 2, pp 9-17.*

OECD (Organization for Economic Co-operation and Development) 2002 *Bank profitability: financial statements of banks Statistics*

OFFICE OF NATIONAL STATISTICS, 2013 Internet Access - Households and Individuals *Statistical bulletin* August 8, 2013 [Online] http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CCA QFjAA&url=http%3A%2F%2Fwww.ons.gov.uk%2Fons%2Fdcp171778_322713.pdf&ei=0i60 U422POuu7AaFgIHQAg&usg=AFQjCNH9gEYbDbc-n8cJBOJAx2iOqVZPMg [Accessed 02/07/2014]

OFFICIAL STATISTICS UK, 1994 Office for National Statistics. *Labour Force Survey*, ONS, UK

OGUNLOWORE, A. J. AND OLADELE, R. 2014 Analysis of Electronic Banking and Customer Satisfaction in Nigeria. *European Journal of Business and Social Sciences, Vol. 3, No.3, pp 14-27,*

OJEKA, S. A. AND IKPEFAN, O. A., 2011, Electronic Commerce, Automation and Online Banking in Nigeria: Challenges and Benefits, *Iranian journal of management Studies (IJMS) Vol.4 No.2 pg. 29*

OKAFOR, C. S., INYIAMA, H.C., OKEZIE, C.C. AND OKAFOR, K.C., 2016 Analysis of Teledensity Growth Model Using Augmented Dickey-Fuller Technique (ADFT) *Scholars Journal of Engineering and Technology Volume 4 Issue 1 pp.15-24.*

OKAFOR, C., RUSSELL, K. AND LAWAL, L., 2012 Effects of the Nigerian Banking Consolidation on Competition, in Kojo Menyah, Joshua Abor (ed.) Finance and Development in Africa (*Research in Accounting in Emerging Economies, Volume 12 Part B) Emerald Group Publishing Limited, pp.75 – 96*

OKAFOR, C., 2012. Change and Consolidation in the Nigerian Banking Industry: an exploration of two key Central Bank of Nigeria objectives. [Online] http://openair.rgu.ac.uk. [Accessed 20/09/2015].

OKE, L., OLUWASUJI, C. O. AND SIMON-OKE, O. O. 2011 Millennium Development Goals (MDGs) and the Yar'adua's Seven Point Agenda in Nigeria: Prospects and Challenges. *An International Multi-Disciplinary Journal, Ethiopia Vol. 5 Issue: 1, pp 57-72*

OKECHI, O. AND KEPEGHOM, O. M., 2013 Empirical Evaluation of Customers' Use of Electronic Banking Systems in Nigeria *African Journal of Computing & ICT Vol. 6 No. 1, pp. 7-20.*

OKIRO, K. AND NDUNGU, J. 2013. The impact of the mobile and internet banking on performance of financial institution in Kenya, *European Scientific Journal Vol.9 No. 13, pp 1-10*

OLAJIDE, V. C., 2012 Cashless Banking in Nigeria and its Implications. *Munich Personal RePEc Archive (MPRA) Paper No. 38096.* [Online] https://mpra.ub.uni-muenchen.de/38096/. [Accessed 12/08/2016]

OLATOKUN, W. M., AND IGBINEDION, L. J., 2009. The Adoption of Automatic Teller Machines in Nigeria: An Application of the Theory of Diffusion of Innovation. *Issues in Informing Science and Information Technology Volume 6, pp 1-10.*

OLAYINKA, T. T AND FAROUK, M. A., 2014. The Impact of Consolidation on the Performance of Banks in Nigeria. Global Advanced Research Journal of Management and Business Studies Vol. 3. Issue 10 pp. 479-485,

OLUCHI, A. 2015. Analyzing the Adequacy of Electronic Transactions Bill 2015 in Facilitating E-Commerce in Nigeria [Online] at http://dx.doi.org/10.2139/ssrn.2651120 [Accessed 29/09/2016]

OLUITAN, R. O., ASHAMU, S. O. AND OGUNKENU, O. S., 2015 The Effect of Recapitalization on Bank Performance in Nigeria. *International Finance and Banking. Vol. 2, No. 1, pp 79-90*

OLUWAGBWEMI, O., ABAH, J. AND ACHIMUGU, P., 2011. The Impact of Information Technology in Nigeria's Banking Industry. *Journal of Computer Science and Engineering, Vol. 7, Issue 2, pp 63-67.*

OLUWOLE, E. A. 2014. Historicising African Traditional Saving System "Esusu" For Occupational Sustainability. *European Journal of Business Management, 2 (1), pp.336-355.*

O'MELIA, S. J. 1991. The Expert Witness. [Online] http://www.millerthomson.com/assets/files/article_attachments/The_Expert_Witness.PDF. [Accessed 12/09/16]

OMOEFE, O. R. AND EGBOKHARE, F., 2013 Acceptance of Mobile Phone in Nigeria For Internet Access Using the Unified Technology Acceptance and Use of Technology (UTAUT) model International Journal of Scientific & Engineering Research, Volume 4, Issue 9, *pp.1-10*

OMOTUNDE, M., SUNDAY T, AND JOHN-DEWOLE A.T 2013 Impact of Cashless Economy in Nigeria. *Greener Journal of Internet, Information and Communication Systems, Vol. 1 Issue 2 pp.040-043*.

ONI, A. A. AND AYO, C. K., 2010. An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria. *Journal of Internet Banking and Commerce* Vol. 15 (1) *pp. 1-13*.

ORR, M. G., THRUSH, R., AND PLAUT, D. C., 2013. The Theory of Reasoned Action as Parallel Constraint Satisfaction: Towards a Dynamic Computational Model of Health Behavior. PLoS ONE 8(5) [Online] http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0062490 [Accessed 08/01/2016]

OSIBANJO, O. AND NNOROM, I. C., 2008 Material flows of mobile phones and accessories in Nigeria: Environmental implications and sound end-of-life management options *Environmental Impact Assessment Review 28. pp 198–213*

OSIMEN, G. U., BALOGUN, A. AND ADENEGAN, T. S., 2013 Ethnicity and Identity Crisis: Challenge to National Integration in Nigerian. *IOSR Journal of Humanities and Social Science Volume 16, Issue 4. PP 79-86*

OYELEYE, O. SANNI, M. SHITTU, T. 2015 An Investigation of the Effects of Customer's Educational Attainment on their Adoption of E- banking in Nigeria. Journal of Internet Bank Commerce 20:133

OYEWOLE, O. S., MOHAMMED, A., EL-MAUDE, J. G., AND ARIKPO, I. A., 2013, E-banking and Bank Performance: Evidence from Nigeria. *International Journal of Scientific Engineering and Technology Volume No.2, Issue No.8, pp. 766-771*

OZDEMIR, S. AND TROTT, P., 2008 Exploring the Adoption of a Service Innovation: A Study of Internet Banking Adopters and Non-Adopters. *Journal of Financial Services Marketing, Vol. 13. Issue 4 pp. 283 – 299*

PADOA-SCHIOPPA, T., 2001, Bank Competition: A Changing Paradigm, *European Finance Review*, Vol. 5, pp. 13–20.

PAGE, S. E., 2006, Path Dependency, *Quarterly Journal of Political Science* Vol. 1, pp 87-115

PALLANT, J., 2013. *SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS for Windows*. New York: Open University Press

PEDRO, I., 2012, Towards the Implementation of Electronic Banking in Nigeria *African Research Review Vol. 6 (2) pp 290-300.*

PEEVERS, G., DOUGLAS, G. MARSHALL, D. AND JACK, M.A., 2011 On the Role of SMS for Transaction Confirmation with IVR Telephone Banking. *International Journal of Bank Marketing Vol. 29 No. 3, pp. 206-223*

PEGG, F., 2007, Electronic funds transfer: What are the security implications? *Emerald backfiles 2007*

PETROVA, K. 2002. *Mobile Banking: Background, Services and Adoption*. In Delener, N. and Chao, C.N. (eds), Beyond Boundaries. *Proceedings of the 2002 GBATA International Conference, 2002, pp. 928-939*

PLEIJSTER, F. AND RUIS, A., 2012 *Point of Sale Transactions, Costs Calculation*. [Online] http://www.bundesbank.de/Redaktion/EN/Downloads/Core_business_areas/Cash_management/conferences/2012/2012_02_27_eltville_08_pleijster_paper_02.pdf?__blob=publicationFile [Accessed 08/01/2014]

POLIT, D.F., BECK, C.T. AND HUNGLER, B.P. 2001. *Essentials of Nursing Research: Methods, Appraisal and Utilization. 5th Ed*., Philadelphia: Lippincott Williams & Wilkins

PROMO NIGERIA, 2012 Get Cash Back on your card with POS purchases, [Online] http://promonigeria.blogspot.co.uk/2012/11/gtbank-promo-to-boost-pos-usage-use.html [Accessed 10/07/2014]

PROMO NIGERIA, 2015 Diamond Bank Use Your Card And Win Promo [Online] http://www.promonigeria.co/2015/11/diamond-bank-use-your-card-and-win-promo.html. [Accessed 29/09/2016]

RADA, V.D.D., 2005. The Effect of Follow-Up Mailings on the Response Rate and Response Quality in Mail Surveys. *Quality & Quantity, 39(1), pp. 1-18.*

RAMBOCAS, M AND ARJOON, S., 2012 Using Diffusion of Innovation Theory to Model Customer Loyalty for Internet Banking: *A TT Millennial Perspective. International Journal of Business and Commerce Vol. 1, No. 8: pp 1-14*

RESNIK, D. B., 2015. What is Ethics in Research & Why is it Important? [Online] http://www.niehs.nih.gov/research/resources/bioethics/whatis/ [Accessed 27/06/16]

RIESSMAN, C.K., 2006" Narrative Analysis" in Jupp, V. The Sage Dictionary of Social Research methods. London: SAGE publications Ltd

RIYADH, A. N., AKTER M. S. AND ISLAM N., 2009. The adoption of e-banking in developing countries: a theoretical model for SMEs*, International review of business research papers. Vol. 5 No.6 pp 212-230*

ROBINS, L., 2009. A summary of Diffusion Innovations. [Online] http://www.enablingchange.com.au/Summary_Diffusion_Theory.pdf [Accessed 12/04/2013]

ROBINSON, J. P., SHAVER, P. R., & WRIGHTSMAN, L. S. (1991). *Criteria for scale selection and evaluation* in J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), Measures of personality and social psychological attitudes. San Diego, CA: Academic Press.

ROGERS, E. M., 1995. *Diffusion of Innovations*. New York: The Free Press.

ROGERS, E. M., 2003. *Diffusion of Innovations*. New York: Free Press

ROGERS, E. M., AND SHOEMAKER, F. F., 1971, Communication of Innovations: A Cross-Cultural Approach, New York, Free Press. pp. 476.

ROTHAERMEL, F. T. AND HILL C. W. L., 2005, Technological Discontinuities and Complementary Assets: A Longitudinal Study of Industry and Firm Performance. *Organization Science Vol. 16, No. 1, pp. 52–70*

ROVNY, J., 2011 Multicollinearity and Heteroscedasticity [Online] http://www.rovny.org/Site/Statistics_in_Stata_files/10.Multicollinearity&Het.pdf. [Accessed 07/07/2016]

SAFEENA, R.; ABDULLAH, M. AND HEMA, D., 2010, Customer Perspective of E-banking Value: Case Study on Internet Banking. *Journal of Internet Banking and Commerce Vol. 15 Issue 1 pp 1-13*

SAKIB, N., RAFI SAZZAD, A. B. M., ALAM, S. B., SHAHNAZ, C., AND FATTAH, S. A., 2010, *Security Enhancement Protocol in SMS-Banking using Digital Watermarking Technique,* UKSim Fourth European Modelling Symposium on Computer Modelling and Simulation, IEEE Computer Society

SALAWU, R. O. AND SALAWU, M. K., 2007. The Emergence of Banking in Nigeria: An Appraisal. *Information Technology Journal 6 (4) 490-496*

SALDAῊA, J., 2013. *The Coding Manual for Qualitative Researchers*. London: SAGE publications Ltd

SALEHI, M. AND ALIPOUR, M., 2010 E-Banking in Emerging Economy: Empirical Evidence of Iran. *International Journal of Economics and Finance Vol. 2, No. 1*

SAMAKOVITIS, G. 2012, U.K. banking experts as decision-makers: a historical view on banking technologies, *Journal of Technology Research, Vol. 3, pp 1-20.*

SANUSI L. S., 2012 *Banking reform and its impact on the Nigerian Economy* Lecture by Mr Sanusi Lamido Sanusi, Governor of the Central Bank of Nigeria, at the University of Warwick's Economic Summit, Warwick, 17 February

SANUSI, L. S., 2011, Banks in Nigeria and National Economic Development: A Critical Review. Keynote Address by Mr. Sanusi Lamido Sanusi; Governor of the Central Bank of Nigeria, At the Seminar on Becoming an Economic Driver while Applying Banking Regulations, Organized by the Canadian High Commission in Joint Collaboration with the Charted Institute of Bankers on Nigeria and the Royal Bank of Canada. Lagos, Nigeria

SATHYE, M., 1999 Adoption of Internet Banking by Australian Consumers: An Empirical Investigation. *International Journal of Bank Marketing Vol. 17 Issue7 pp.324-334*

SAYAR, C. AND WOLFE, S., 2007 Internet banking market performance: Turkey versus the UK *International Journal of Bank Marketing Vol.25 No.3, pp 122-141*

SEKARAN, U. AND BOUGIE, R., 2013. *Research Methods for Business: A Skill Building Approach.* United Kingdom: John Wiley and Sons Ltd.

SEKARAN, U. AND BOUGIE, R., 2016. *Research Methods for Business: A Skill Building Approach.* United Kingdom: John Wiley and Sons Ltd.

SHINGI, P. M., AND MODY, B. 1976, "The Communication Effects Gap: A Field Experiment on Television and Agricultural Ignorance in India," Communication Research, 3: pp 171-193.

SIMON, M.K. *2011 Dissertation and Scholarly Research: Recipes for Success (2011 Ed.)* Seattle, WA: Dissertation Success LLC.

SIMON, M. K. AND GOES, J., 2013, *Dissertation and Scholarly Research: Recipes for Success.* Seattle, WA: Dissertation Success LLC

SINGHAL, D. AND PADHMANABHAN, V., 2008 A Study on Customer Perception towards Internet Banking: Identifying Major Contributing Factors. *The Journal of Nepalese Business Studies Vol. V. No. 1, pp 101-111.*

SIYANBOLA, T. T., 2013 The Effect of Cashless Banking on Nigerian Economy *eCanadian Journal of Accounting and Finance Vol. 1, Issue 2 pp 9-19.*

SKINNER, M., 2012, Research – *The Essential Guide; Ways to Categorize Research and Methodology.* [Online] http://www.bfi.org.uk/education/teaching/researchguide/pdf/bfi-edu-resources_research-the-essential-guide.pdf [Accessed 05/02/2013]

SMITH, M. (2015). Research Methods in Accounting. London: SAGE publications.

SOBH, R. AND PERRY, C., 2006, Research Design and Data Analysis in Realism Research *European Journal of Marketing Vol.40. No.11/12, pp 1194-1209*

SOLEY-BOR, M, 2013. Dealing with missing data: Key assumptions and methods for applied analysis Technical Report No. 4 Boston University School of Public Health Department of Health Policy and Management. [Online] http://www.bu.edu/sph/files/2014/05/Marina-tech-report.pdf. [Accessed 31/05/2016]

SOLUDO, C., 2004, consolidating the Nigerian Banking Industry to meet the Development Challenges of the 21st Century, A paper presented at the Special Meeting of the Banking Committee held on the 6th of July at the Central Bank of Nigeria Headquarters, Abuja Nigeria

SOLUDO, C., 2006 *Beyond banking sector consolidation in Nigeria.* Paper presented at the 12th Annual Nigerian Economic Summit, Transcorp Hilton, Abuja, June 7th – 9th

SOMOYE, R. O. C., 2008 The Performances of Commercial Banks in Post-Consolidation Period in Nigeria: An Empirical Review *European Journal of Economics, Finance and Administrative Sciences - Issue 14, pp 62-73.*

SOUTHEY, G., 2011. The Theories of Reasoned Action and Planned Behaviour Applied to Business Decisions: A Selective Annotated Bibliography. *Journal of New Business Ideas & Trends Vol. 9(1), pp. 43-50.*

SPAIS, G. S., 2006. An ordinal regression analysis for the explanation of consumer overall satisfaction in the food-marketing context: The managerial implications to the consumer strategy management at a store level. *Database Marketing & Consumer Strategy Management Vol. 12 (1) pp. 51-73*

SPSS INC. 2007, SPSS Missing Values™17.0. [Online] http://www.helsinki.fi/~komulain/Tilastokirjat/IBM-SPSS-Missing-Values.pdf. [Accessed 31/05/2016]

STEPHENSON, G., 2003. The somewhat flawed theoretical foundation of the Extension Service. *Journal of Extension Vol. 41 No. 4, pp.1-7*

SWIFT, 1996, "Preparing Numerical Data" in Sapsford, R. and Jupp, V., Data Collection and Analysis London: SAGE publications Ltd

TABACHNICK, B. G. AND FIDELL, L. S., 2001. *Using Multivariate Statistics*. Needham Heights: Allyn & Bacon.

TAIT, F. AND DAVIS, R.H., 1989, The development and future of home banking, *International Journal of Bank Marketing, Vol. 7 No. 2, pp. 3-9.*

TAN, M. AND TEO, T. S. H., 2000 Factors Influencing the Adoption of Internet Banking, *Journal of the Association for Information Systems, Vol.1 Article*

TARHINI, A., MGBEMENA, C., TRAB M.S.A., AND MASA'DEH, R. (2015) User Adoption of Online Banking in Nigeria: A Qualitative Study. Journal of Internet Banking and Commerce 20:132. [Online] http://www.icommercecentral.com/open-access/user-adoption-of-online-banking-in-nigeria-a-qualitative-study.php?aid=62468 [Accessed 21/07/2016]

TEECE, D. J., 1986. Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy.Vol.15 pp. 285-305*

TEIJLINGEN, E. V. AND HUNDLEY, V., 2001. The importance of pilot studies. Social Research 35 [Online] http://aura.abdn.ac.uk/handle/2164/157 [Accessed 27/07/16]

TERRELL, S. T., 2012 Mixed-Methods Research Methodologies the Qualitative Report [Online] http://www.nova.edu/ssss/QR/QR17-1/terrell.pdf [Accessed 12/18/2015]

THE LION KING-BLOG EDITION, 2013 Go Cashless and Get Rewarded, [Online] http://blog.ubagroup.com/2013/12/go-cashless-and-win-prizes-from-uba.html [Accessed 10/07/2014]

THE STATISTICAL PORTAL, 2016 Number of internet users in selected countries in Africa as of June 2016, by country (in millions). [Online] http://www.statista.com/statistics/505883/number-of-internet-users-in-african-countries/ . [Accessed 23/08/2016]

THISDAY NEWSPAPER NIGERIA, 2013 Again, GTBank Urges Customers to Adopt e-Banking Channels June 10, [Online] http://www.thisdaylive.com/articles/again-gtbank-urges-customers-to-adopt-e-banking-channels/149939/ [Accessed 18/03/2014]

THOMAS, W. I. AND THOMAS, D.S., 1928. *The child in America: Behavior problems and programs.* pp. 571-572. New York: Knopf,

TIJANI, J. A. AND ILUGBEMI, A. O. 2015 Electronic Payment Channels in the Nigeria Banking Sector and Its Impacts on National Development. *Asian Economic and Financial Review, Vol. 5 Issue 3 pp: 521-531*

TIWARI, R. AND BUSE, S., 2007, *The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in the Banking Sector*, Hamburg: Hamburg University Press, pp 33

TORRA, V., DOMINGO-FERRER, J MATEO-SANZ, J. M AND NG, M., 2005 Regression for ordinal variables without underlying continuous variables. *Information Sciences Vol. 176 pp. 465-474.*

TRADING ECONOMICS, 2016 AGE DEPENDENCY RATIO (% OF WORKING-AGE POPULATION) IN NIGERIA. [Online] http://www.tradingeconomics.com/nigeria/age-dependency-ratio-percent-of-working-age-population-wb-data.html. [Accessed 03/08/16]

TROTT, P., 2012. Innovation management and New Product Development England: Pearson Education Limited

TRUONG, Y., 2009. An Evaluation of the Theory of Planned Behaviour in Consumer Acceptance of Online Video and Television Services. *The Electronic Journal Information Systems Evaluation Volume 12 Issue 2 pp.177 – 186*

TUNMIBI, S. AND FALAYI, E., 2013 IT Security and E-Banking in Nigeria *Greener Journal of Internet, Information & Communication System. Vol. 1 (3), pp. 061-065, August 2013.*

UDUAK, M. E., AND UBONG E. U., 2015 Banking Sector Reforms and the Performance of Commercial Banks in Nigeria. *Journal of World Economic Research. Vol. 4, No. 3, 2015, pp. 45-60.*

VANGUARD NEWSPAPER July 11, 2010 Nigerians shun formal for informal banking. [Online] http://www.vanguardngr.com/2010/07/nigerians-shun-formal-for-informal-banking/. [Accessed 20/09/2016]

VANGUARD NEWSPAPER, Sep. 9, 2015 '54 million Nigerians are illiterates' [Online] http://www.vanguardngr.com/2015/09/54-million-nigerians-are-illiterates/ [Accessed 03/08/16]

VATS, A., 2009, *Can Emerge Economies Bank on TV?* [Online] http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=4&ved=0CDI QFjAD&url=http%3A%2F%2Fwww.infosys.com%2Ffinacle%2Fsolutions%2Fthought-papers%2FDocuments%2FBank-on-TV.pdf&ei=R3wEVLbPBcSb0QXLyoCoCQ&usg=AFQjCNENtxSSLjYoM4SavT_mugD_Tb TdqQ [Accessed 01/09/2014]

VAUGHAN, I.O., AFOLAMI, C. A., OYEKALE, T. O. AND AYEGBOKIKI, A.O., 2014 An Analysis Of Nigeria Food Imports And Bills. *International Journal of Economics, Commerce and Management Vol. II, Issue 9*

VENKATESH, V., MORRIS, M. G., DAVIS, G. B. AND DAVIS, F. D., 2003, User Acceptance of Information Technology: Toward a Unified View, *MIS Quarterly (27:3), pp. 425-478.*

WALLIMAN, N., 2016. *Social Research Methods*. London: SAGE publications Ltd

WANG, Y., WU, S., LIN, H., WANGE, Y., AND HE, T, 2012. Determinants of User adoption of web ATM: an integrated model of TCT and IDT. *The Service Industries Journal Vol. 32 No.9 pp. 1505-1525*

WASSERMAN, C. M. AND MAKOW, L. S., 1999, Electronic Banking: How the Internet is Changing the Face of Banking. *Banking Policy Report, Vol.18 No 21, pp 5-7*

WHELAN, K., 2016 International Money and Banking. [Online] http://www.karlwhelan.com/IMB/part1.pdf [Accessed 02/08/2016]

WHITE, H. AND NTELI, F., 2004, Internet Banking in the UK: why are there not more customers? *Journal of Financial Services Marketing, Vol. 9 No. 1, pp. 49-56.*

WILLIAM, C. C., 1996. The New Barter Economy: An appraisal of Local Exchange and Trading system (LETS). *Journal of public policy, Vol. 16 No. 1 pp 85-101*

WILLIAMS, B., BROWN, T., AND ONSMAN, A. 2010. Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine, 8 (3), pp 1-14*

WINSHIP, C. AND MARE, R. D., 1984 Regression Models with Ordinal Variables. *American Sociological Review Vol. 49pp. 512-525*

WOHEREM, E. W., 2000, *Information Technology in the Nigerian Banking Industry*. Ibadan: Spectrum books Limited

WORLD BANK 2013, Nigeria Economic Report. [Online]
http://documents.worldbank.org/curated/en/934931468291633000/pdf/776840WP0Niger0Box0
342041B00PUBLIC0.pdf [Accessed 03/08/16]

WORLD BANK 2014 Age dependency ratio (% of working-age population) [Online]
http://data.worldbank.org/indicator/SP.POP.DPND [Accessed 04/04/2014]

WORLD ECONOMIC FORUM, 2014 Nigeria Case Study Prospects for Reaping Demographic
Dividend in Nigeria. [Online]
http://www3.weforum.org/docs/GAC/2014/WEF_GAC_NigeriaCaseStudy_Summary_2014.pdf
[Accessed 03/08/16]

WORLD POPULATION REVIEW, 2016 [Online]
http://worldpopulationreview.com/countries/nigeria-population/ [Accessed 08/07/2016]

WORLDOMETERS, 2016 Nigeria Population [Online] http://www.worldometers.info/world-
population/nigeria-population/ [Accessed 03/08/16]

WUYAH, Y. T. AND AKPAN, J. E., 2015 Influence of Cashless Economic Policy on the
Nigerian Economy, *Online Journal of the social science Research Volume 4, Issue 3, pp 34 –
40*

WYSE, S.E. 2012 Why Use Demographic Questions in Surveys? [Online]
http://www.snapsurveys.com/blog/demographics-questions-surveys/ [Accessed 12/12/2015]

XIA F., ZHOU, L., YANG, Y, AND ZHANG, W., 2007 Ordinal Regression as Multiclass
Classification. *International Journal of Intelligent Control and systems. Vol. 12 No. 3 pp. 230-
236.*

XIE, N.H., ZHAO, C.Y. AND YANG, D.F. 2014. Study on Effects of Regulation by Switching
Costs in Mobile Communication Consumption of College Students. *Journal of Service Science
and Management, Vol. 7, pp. 440-445*

YAQUB, J. O., BELLO H. T., ADENUGA, I. A. AND OGUNDEJO, M. O., 2013. The
Cashless Policy in Nigeria: Prospects and Challenges *International Journal of Humanities and
Social Science Vol. 3 No. 3, pp 200-212.*

YATES, S. J., 2004. *Doing Social Science Research.* London: SAGE publications Ltd.

YIU, T. W., 2014 *The Efficacy of Trust-Building Tactics in Construction Dispute Mediation* in
Cheung S.O (ed.), Construction Dispute Research: Conceptualisation, Avoidance and
Resolution. Switzerland: Springer International Publishing

YU, C., 2012 Factors Affecting Individuals to adopt Mobile Banking *Journal of Electronic
Commerce Research, Vol. 13, No. 2 pp 104-121.*

YUEN, Y. Y., 2013, Gender and Age Effect on Acceptance of Internet Banking: Cultural Comparison between United States and Malaysia. *International Journal of Business and Management; Vol. 8, No. 18. pp 1 -10*

YUNANA, T. W. AND JAMES, E. A., 2015 Influence of the cashless economic policy on the Nigerian economy. *Online Journal of the social sciences Research. Vol. 4. Issue 3 pp 34 -40*

ZEKO G. I., 2004, Cyberspace and E-Finance, *Hertfordshire Law Journal Vol.2 No. 1 pp 31-44*

ZUMBO, B.D., AND ZIMMERMAN, D.W., 1993. Is the selection of statistical methods governed by level of measurement? *Canadian Psychology, 34, pp. 390 - 400.*

APPENDIX I

Technological Innovations in UK Banking Services   (1846 - 2013)

YEAR	INNOVATIONS	SPECIFIC FEATURES
1866	Telegraph Messaging Services	Introduction of telecommunication into banking market
End of 1930s	Tabulating Machines And Adding And Listing Machines, Punch-Hole Accounting Machine	Tailored towards improvement in accounting functions and clerical tasks
1950s - 1960s	Introduction of computer to banking services	Automation of existing banking practices in certain departments
1965 - 1969	Electronic Data Processing System (EDP) and database management t system (DBMS)	Intra-bank network; convergence of telecommunications and computer power resulted in true IT application
1956 - 1967	Credit Cards and ATM	Cash withdrawal from credit card accounts
1970s	Personal Computer, digital data telecommunication and programming	Relational data base management system
1980s - 1995	Electronic Fund Transfer at the Point of sale (EFTPOS), telephone banking and card technologies e.g. visa, master cards	customer oriented period, standardization of internal systems by all financial institutions
1995 - 2013	Online and Mobile banking	More personalized banking

Source: *Author generated from the analyses of Ackrill and Hannah, (2001); B`Atiz-Lazo and Wood, (2002); Samokovitis, (2012).*

APPENDIX II

15/10/2014

Dear Sir/Madam,

INTERVIEW QUESTIONS

This study focuses on e-banking adoption in Nigeria by individual bank customers.

The questions have been divided into five sections in line with the research aims and

objectives. Please note that this will take about 20-25min of your time to complete. I

shall be glad to have your expert contribution in this regard sir.

Yours sincerely,

Ibukun Sokari
Doctoral Researcher
Aberdeen Business School
Robert Gordon University
UK

TECHNOLOGY INNOVATION MANAGEMENT IN THE NIGERIAN BANKING INDUSTRY: INTEGRATING STAKEHOLDERS' PERSPECTIVES, AN EXPLORATION OF STRATEGY AND POLICY IMPLICATIONS

In line with Burr (1996) definition, this study conceives e-banking as an electronic platform that exists between customers and banks which enables the preparation, control and oversight of financial transactions. Thus, the major e-banking platforms this study focuses on are the following five: **ATM**, **Internet banking/Online banking** (involves the use of electronic devices such as personal computer, laptops with the aid of internet to carry out banking transactions), **POS** (Electronic Fund Transfer/Point of Sales with the use of credit and debit Card), **Telephone banking** and **Mobile banking** (utilizes mobile phones as platform form banking activities)**.**

SECTION 1: E-BANKING TAKE-UP BY BANKS

1. When did your bank adopt e-banking products and services?

2. What would you describe as your bank's rationale for the adoption of e-banking at that time?

3. Are there any relationships with your bank's adoption of e-banking and the 2004 consolidation policy? If yes, please elaborates

4. How would you describe the readiness of your bank to e-banking adoption?

SECTION 2: AVAILABLE E-BANKING CHANNELS AND THE LEVEL OF PATRONAGE

1. What are the e-banking channels that your bank provides?

2. Which of the e-banking channels is most patronized in terms of the volume and value of transaction?

3. Why is this channel the most patronized?

4. What category of your customers are the major users of the most patronized channel(s)?

5. What kind of publicity has your bank given to e-banking to encourage adoption?

6. What factors would you consider as responsible for the low patronage of other e-banking channels that are less patronized.

SECTION 3: PERCEIVED RISKS BY BANKS AND BANK CUSTOMERS

1. What are the perceived risks of e-banking adoption to your bank?

2. Are there any perceived risks your bank has identified regarding your customers?

3. How has your bank been able to cope or dealt with identified risks

4. What are the checks and balances to curtail e-banking fraudulent transactions?

SECTION 4: COST IMPLICATIONS FOR THE ADOPTION OF E-BANKING BY INDIVIDUAL BANK CUSTOMERS AND CUSTOMERS

1. What are the processes for a customer to switch to e-banking?

2. What are the cost implications for a customer to switch to e-banking?

SECTION 5: RESPONDENT PROFILE

1. What is the name of your bank?

2. What is your job title?

3. How long have you been working for the bank?

APPENDIX III

25/05/2015

Dear Respondent,

Survey Questionnaire

This study is on the exploration of electronic banking (e-banking) acceptance in Nigeria. This questionnaire has been divided into four sections in line with the research aims and objectives. Please note that this will take about 10-15min of your time. Be assured that your answers will be treated with utmost confidentiality.

 I shall be glad to have your sincere opinion in this regard.

Thank you.

Ibukun Sokari
Doctoral Researcher
Robert Gordon University
Aberdeen

TECHNOLOGY INNOVATION MANAGEMENT IN THE NIGERIAN BANKING INDUSTRY: INTEGRATING STAKEHOLDERS' PERSPECTIVES, AN EXPLORATION OF STRATEGY AND POLICY IMPLICATIONS

In line with Burr (1996) definition, this study conceives e-banking as an electronic platform that exists between customers and banks which enables the preparation, control and oversight of financial transactions. Thus, the major e-banking platforms this study focuses on are the following five: **Automated Teller Machine** (**ATM), Internet banking/Online banking** (involves the use of electronic devices such as personal computer, laptops with the aid of internet to carry out banking transactions), **POS** (Electronic Fund Transfer/Point of Sales with the use of credit and debit Card), **Telephone banking** and **Mobile banking** (utilizes mobile phones as platform for banking activities).

* Are you aware of the five e-banking platforms listed above? Yes ☐   No ☐

* **Do you have a bank account in Nigeria?**   Yes ☐   No ☐

SECTION 1: INNOVATION ADOPTION BASED ON THE ROGERS' FIVE CONSTRUCTS

1. The following questions are to help to determine your perception about the advantages that e-banking system may have over the traditional manual banking system.

   N.B: Please tick the box that best reflects your opinion on each of the following statements.

   Code: 1= strongly disagree, 2= disagree, 3= no effect, 4= agree, 5= strongly agree

	1	2	3	4	5
E-banking is more efficient than manual banking					
E-banking is a convenient banking system					
I spend less time on banking transactions with e-banking					
E-banking gives me quick access to my bank account(s)					
E-banking allows me to manage my financial resources effectively					
E-banking gives me greater control over my finance					

2. The following questions are designed to determine your perception about the compatibility of e-banking with your life style.

N.B: Please tick the box that best reflects your opinion on each of the following statements.

Code: 1= strongly disagree, 2= disagree, 3= no effect, 4= agree, 5= strongly agree

	1	2	3	4	5
E-banking fits well with the way I like to carry out my banking transactions					
E-banking is compatible with my lifestyle					
I like to try new technology					

3. The following questions are designed to examine how easy or complex you perceive e-banking services.

N.B: Please tick the box that best reflects your opinion on each of the following statements.

Code: 1= strongly disagree, 2= disagree, 3= no effect, 4= agree, 5= strongly agree

	1	2	3	4	5
E-banking requires a lot of mental effort					
I believe it is easy to do my banking transactions through e-banking					
Overall, I believe that e-banking is easy to use					
Learning to make use of e-banking is easy for me					

4. The following questions are designed to determine your perception regarding trying to use e-banking.

N.B: Please tick the box that best reflects your opinion on each of the following statements.

Code: 1= strongly disagree, 2= disagree, 3= no effect, 4= agree, 5= strongly agree

	1	2	3	4	5
I have had a great deal of opportunity to try various e-banking services					
I know where I can go to satisfactorily try out various e-banking services					

5. The following questions are designed to determine bank customers' observations regarding e-banking services.

N.B: Please tick the box that best reflects your opinion on each of the following statements.

Code: 1= strongly disagree, 2= disagree, 3=no effect, 4=agree, 5= strongly agree

	1	2	3	4	5
I have seen how others use e-banking services before using them					
I was influenced by what I observed as the benefits of using e-banking services					
With e-banking, I can see the effect of my banking transactions immediately					

SECTION 2: COST IMPLICATION FOR THE ADOPTION OF E-BANKING IN NIGERIA

The questions in this section are designed to examine the perception of Nigerian bank customers regarding the cost implication for the adoption of e-banking system

N.B: Please tick the box that best reflects your opinion on each of the following statements.

Code: 1= strongly disagree, 2= disagree, 3= no effect, 4= agree, 5= strongly agree

	1	2	3	4	5
Procedural Switching Costs					
Switching to e-banking involves hidden charges					
It takes much time and effort to get the information needed to fully adopt e-banking					
Learning to use the services offered via e-banking takes time					
Financial Switching Costs					
I may lose the benefits of the manual banking system if I switch to e-banking					
Switching to e-banking involves some upfront costs					
Relational Switching Costs					
I like a face to face interaction with my bank officials					
I have overtime enjoyed the personal relationship I have built with my bank officials					

SECTION 3: THE USEFULNESS OF E-BANKING SERVICES, THE AVAILABLE ASSESTS AND THE LEVEL OF CUSTOMERS' PATRONAGE

The questions in this section are designed to examine the perception of individual bank customers regarding the usefulness of the available e-banking products and services, the complementary assets available to individual customers, and the level of e-banking patronage.

N.B: *Please tick the box that best reflects your opinion on each of the following statements*.
Code: 1= strongly disagree, 2= disagree, 3= no effect, 4= agree, 5= strongly agree

Usefulness of available e-banking services	1	2	3	4	5
The available e-banking platforms/services are not useful for me					
I do not need many of the e-banking platforms/services					
Complementary Assets					
I think I have the devices to do e-banking					
I do have access to internet facilities					
The call rates to my bank's customer service unit is high					
The customer service unit contact line of my bank is often not available					

1. **Which of the following electronic devices do you have access to?**
NB: Please tick as appropriate

Landline ☐   Mobile phone ☐   iPad ☐   Laptop ☐   Desktop computer ☐

2. How often do you access the internet?
NB: Please tick as appropriate

Never ☐   Hardly ☐   Sometimes ☐   Often ☐   Very Often ☐

3. How often do you use each of the following e-banking platforms in Nigeria?

	Never	Hardly	Sometimes	Often	Very Often
a) ATM					

*Please specify reason(s) for your level of patronage

	Never	Hardly	Sometimes	Often	Very Often
b) POS: (Point of Sale Machine with the use of debit/Credit/Master Cards):					

*Please specify reason(s) for your level of patronage:

	Never	Hardly	Sometimes	Often	Very Often
c) Online/Internet banking					

*Please specify reason(s) for your level of patronage:

	Never	Hardly	Sometimes	Often	Very Often
d) Mobile banking:					

*Please specify reason(s) for your level of patronage:

	Never	Hardly	Sometimes	Often	Very Often
e) Telephone banking					

*Please specify reason(s) for your level of patronage:

4. Which of the following e-banking platforms have you used to carry out the HIGHEST banking transaction you have ever made? ATM ☐ POS ☐ Online/Internet banking ☐

Mobile banking ☐ Telephone banking ☐

6

SECTION 4: DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

NB: Please tick as appropriate

	Male	Female
Gender		

	18 - 30yrs	31 - 40yrs	41 - 50yrs	51 - 65yrs
Age Category				

	No Formal Education	Primary Education	Secondary Education	Tertiary Education
Education				

ROBERT GORDON
UNIVERSITY•ABERDEEN

6th October 2014

To whom it may concern,

re: Mrs Ibukun Sokari (student ID: 0917804)

This is to introduce my doctoral student Ibukun Sokari and to ask that you provide assistance with her comparative investigations into the acceptance of e-banking in Nigeria and in the UK. All research is subject to the research ethics policy of the University and Ibukun will take every care with any data produced to preserve anonymity.

The University would be very grateful for any assistance you can offer Mrs Sokari in her study of this important topic.

Yours sincerely,

Professor Ken Russell
Associate Dean
Aberdeen Business School
Robert Gordon University
Garthdee Campus
Garthdee Road
Aberdeen
AB10 7QE
Tel +44(0) 1224 263552
Email: k.russell@rgu.ac.uk

RESEARCH ETHICS: RESEARCH STUDENT AND SUPERVISOR ASSESSMENT (RESSA)

ROBERT GORDON UNIVERSITY ABERDEEN

The aim of the University's *Research Ethics Policy* is to establish and promote good ethical practice in the conduct of academic research. This *self assessment* is intended to enable researchers to undertake an initial self-assessment of ethical issues in their research.

Ethical conduct is not primarily a matter of following fixed rules; it depends on researchers developing a considered, flexible and thoughtful practice.

This *self assessment* aims to engage researchers discursively with the ethical dimensions of their work and potential ethical issues, and the main focus of any subsequent review is not to 'approve' or 'disapprove' of a project but to make sure that this process has taken place.

The *Research Ethics Policy* is available at www.rgu.ac.uk/research-ethics-policy

Research Student Name	
Principal Supervisor	
Graduate School	
Research Project Title	

LAY SUMMARY
Please describe the project in plain English (i.e. non-scientific terms)

PART 1: DESCRIPTIVE QUESTIONS

1.	Does the research involve, or does information in the research relate to: *[see Guidance Note 1]*	Yes	No
	(a) individual human subjects	☐	☐
	(b) groups (e.g. families, communities, crowds)	☐	☐
	(c) organisations	☐	☐
	(d) animals?	☐	☐
	(e) genetically-modified organisms www.rgu.ac.uk/hr/healthsafety/page.cfm?pge=26027#122628	☐	☐
	Please provide further details:		

		Yes	No
2.	Will the research deal with information which is private or confidential? *[see Guidance Note 2]*	☐	☐

Please provide further details:

PART 2: THE IMPACT OF THE RESEARCH

		Yes	No
3.	In the process of doing the research, is there any potential for harm to be done to, or costs to be imposed on: *[see Guidance Note 3(i)]*		
	(a) research participants?	☐	☐
	(b) research subjects? *[see Guidance Note 3(ii)]*	☐	☐
	(c) you, as the researcher?	☐	☐
	(d) third parties? *[see Guidance Note 3(iii)]*	☐	☐

Please state what you believe are the implications of the research:

		Yes	No
4.	When the research is complete, could negative consequences follow:		
	(a) for research subjects	☐	☐
	(b) or elsewhere? *[see Guidance Note 4]*	☐	☐

Please state what you believe are the consequences of the research:

PART 3: ETHICAL PROCEDURES

		Yes	No
5.	Does the research require informed consent or approval from: *[see Guidance Note 5(i)]*		
	(a) research participants?	☐	☐
	(b) research subjects? *[see Guidance Note 5(ii)]*	☐	☐
	(c) external bodies? *[see Guidance Note 5(iii)]*	☐	☐

If you answered yes to any of the above, please explain your answer:

6.	Are there reasons why research subjects may need safeguards or protection? *[see Guidance Note 6]*	**Yes** ☐	**No** ☐

If you answered yes to the above, please state the reasons and indicate the measures to be taken to address them:

7.	Does the research involve any "regulated work with children" and/or "regulated work with protected adults", therefore requiring membership of the *Protecting Vulnerable Groups (PVG) Scheme*? *[see Guidance Note 7]*	**Yes** ☐	**No** ☐

[Please note: if the research potentially involves "regulated work", this MUST be raised with your HR Business Partner immediately. In this instance, the Human Resources Department will conduct a detailed assessment and will confirm whether or not PVG Membership is required.]

		Yes	No
(a) PVG membership is not required.		☐	☐
(b) PVG membership may be required for working with children.		☐	☐
(c) PVG membership may be required for working with protected adults.		☐	☐
(d) PVG membership may be required for working with both children and protected adults.		☐	☐

If you answered yes to (b), (c) or (d) above, please give further information about the work you will be required to undertake and the nature of the contact with these groups. Please provide as much detail as possible:

Are you already a PVG member?	**Yes** ☐	**No** ☐

If yes, please provide your PVG Scheme number:

8.	Are specified procedures or safeguards required for recording, management, or storage of data? *[see Guidance Note 8]*	**Yes** ☐	**No** ☐

If you answered yes to the above, please give details:

PART 4: THE RESEARCH RELATIONSHIP

9. Does the research require the researcher to give or make undertakings to research participants or subjects about the use of data? *[see Guidance Note 9]*

Yes ☐   **No** ☐

If you answered yes to the above, please outline the likely undertakings:

10. Is the research likely to be affected by the relationship with a sponsor, funder or employer? *[see Guidance Note 10]*

Yes ☐   **No** ☐

If you answered yes to the above, please identify how the research may be affected:

PART 5: OTHER ISSUES

11. Are there any other ethical issues not covered by this form which you believe you should raise?

Yes ☐   **No** ☐

If you answered yes to the above, please give details:

STATEMENT BY RESEARCH STUDENT

I believe that the information I have given in this form is correct, and that I have addressed the ethical issues as fully as possible at this stage.

Signed: **Date:**

If any ethical issues arise during the course of the research, students should complete a further *RESSA* form. The *Research Ethics Policy* is available at www.rgu.ac.uk/research-ethics-policy

PART 6: TO BE COMPLETED BY THE PRINCIPAL SUPERVISOR

12.	Does the research have potentially negative implications for the University? *[see Guidance Note 11]*	**Yes** ☐	**No** ☐

If you answered yes to the above, please explain your answer:

13.	Are any potential conflicts of interest likely to arise in the course of the research? *[see Guidance Note 12]*	**Yes** ☐	**No** ☐

If you answered yes to the above, please identify the potential conflicts:

14.	Are you satisfied that the student has engaged adequately with the ethical implications of the work? *[see Guidance Note 13]*	**Yes** ☐	**No** ☐

If you answered no to the above, please identify the potential issues:

15.	Has the *RESSA* been considered and/or approved by an internal forum, e.g. a School Ethics Review Panel (SERP) or equivalent? If yes, please provide details.	**Yes** ☐	**No** ☐

16.	Please select one of the following:

i.	The research project should proceed in its present form – no further action is required	☐
ii.	The research project requires ethical review by the University's Research Ethics Sub-Committee (RESC)	☐
iii.	The research project requires ethical review by an external body (N.B. Question 5 above). If this applies, please give these details:	☐
	Title of external body providing ethical review	
	Address of external body	
	Anticipated date when external body may consider project	

AFFIRMATION BY PRINCIPAL SUPERVISOR

I have read the research student's responses and have discussed ethical issues arising with the research student. I can confirm that, to the best of my understanding, the information presented by the research student is correct and appropriate to allow an informed judgement on whether further ethical approval is required.

Signed:		**Date:**	

If any ethical issues arise during the course of the research, a further *RESSA* should be completed.

ⓘ **Guidance Note 1**

Ethical principles normally apply to information, data, and derivative substances in the same way as they apply to the subjects themselves. Consequently, work with individual financial data is governed by the principles of work with individual human subjects, and work with animal tissue is governed by the principles of work with animals. [return to Question 1]

ⓘ **Guidance Note 2**

The Australian National Health and Medical Research Council argues: "Individuals have a sphere of life from which they should be able to exclude any intrusion ... A major application of the concept of privacy is information privacy: the interest of a person in controlling access to and use of any information personal to that person." This principle applies to all information about a person, whether or not it is obtained directly from that person. The area that is private is conventional and culturally defined; in the UK it commonly includes income and family arrangements.

The information obtained in research is not, however, necessarily private. Some material is in the public sphere, which includes published and broadcast material, academic discourse, and the activities of government. Activities undertaken in a public place are public, rather than private, if they are openly displayed (e.g. artistic exhibition or attendance at a public event) or subject to public regulation (e.g. driving)."

[return to Question 2]

ⓘ **Guidance Note 3**

(i) "Harm" refers to negative consequences beyond those which would occur in the normal course of events. Costs may include putting subjects under stress, causing them anxiety, or even wasting their time. The question asks only about potential harm. Potential harm is not cancelled out by potential benefit. Broader consequences are considered in the following question.
Reviews of information are also subject to ethical consideration. It should never be assumed that no harm can be done to people simply by writing about them.

(ii) "Research subjects" includes not just participants and informants but those about whom data is collected. The term covers any research subject, including humans, animals, and inanimate subject matter.

(iii) The University has a responsibility to avoid putting you at risk, and potentially dangerous situations should always be drawn to the University's attention.

(iv) "Third parties" include any person, group or organisation who may be affected by the process of the research. [return to Question 3]

ⓘ **Guidance Note 4**

"Elsewhere" is an open category, intended to include consequences for third parties, sections of the community (e.g. "the voluntary sector"), the economy ("the catering industry") or the environment. ("the national park"), globally, and generalities which are harder to identify (e.g. "animal welfare"). Student researchers should never assume that their work is harmless only because they don't believe others will read it.

[return to Question 4]

ⓘ **Guidance Note 5**

(i) Research in the public sphere (question 2) may not require the consent or approval of research subjects. The advice of the Canadian Tri-Boards is that "REBs (research ethics boards) should recognize that certain types of research - particularly biographies, artistic criticism or public policy research - may legitimately have a negative effect on organizations or on public figures in, for example, politics, the arts or business. Such research does not require the consent of the subject ... Consent is not required from organizations such as corporations or governments for research about their institutions".

There is a general presumption that consent should be obtained from subjects whenever the information is private. The requirement to seek consent can, however, be waived in certain exceptional cases, for example where there is necessary deception, or where the consent of a

subject may jeopardise the welfare of an informant. All such cases require explicit ethical review and an extended justification.

(ii) The consent of research *subjects* cannot be presumed because the consent of *informants* has been obtained. For example, one member of a family cannot necessarily be taken to speak for others, and an employer cannot always give consent on behalf of employees.

(iii) The consent of *external bodies* is required for several types of research, including e.g.
   − research relating to the NHS
   − research for work with dangerous substances, and
   − research involving experimentation with animals.
   The existence of external consent does not ethically exclude the project from consideration by the University, or vice-versa. Please provide a brief description of the project as submitted to the external body for ethical review.

[return to Question 5]

ⓘ Guidance Note 6
This may apply, for example, to human subjects who are regarded as vulnerable (e.g. children or prisoners) and to animals. Consent should not be taken as sufficient protection.

[return to Question 6]

ⓘ Guidance Note 7
(i) Regulated work normally involves caring for, supervising or working with individuals who participate in an organised activity. There are two types of regulated work: regulated work with **children** and regulated work with **protected adults.**

(ii) **Children** are all people under the age of 18.

(iii) **Protected adults** are individuals aged 16 or over who are provided with (and thus receive) a type of care, support or welfare service. It is a service-based definition and avoids labelling adults on the basis of disability. A person will be a protected adult for the duration that they are receiving the service. Therefore some adults will be protected most of the time (e.g. residents within a care home) whereas others will only be protected for short periods (e.g. whilst receiving medical treatment at a hospital).

(iv) Further details can be found at www.rgu.ac.uk/about/governance/policies-and-legal/disclosure-scotland and www.disclosurescotland.co.uk/pvg/pvg_index.html.
   Alternatively, you may want to discuss this with your HR Representative:
   https://you.rgu.ac.uk/org/hr/SitePages/Meet%20the%20HR%20Team.aspx.

[return to Question 7]

ⓘ Guidance Note 8
Private data should be presumed to be under the control of the person or organisation to whom it relates. Anonymity is not a sufficient condition for confidentiality. Removing names from a report, or using aggregate data, may not be enough to ensure that respondents cannot be recognised or identified; and even where material is not identifiable except by the person who gave it, using it in ways that go beyond the terms on which it has been given may be a breach of trust.

[return to Question 8]

ⓘ Guidance Note 9
The integrity of the researcher, and the status of future research, requires that such undertakings should be respected. Promises should not be given in circumstances where they cannot be kept. For example, a researcher is not at liberty to conceal criminal activity and consequently cannot offer unconditional confidentiality in a study of such activity. [return to Question 9]

ⓘ **Guidance Note 10**
Students who are undertaking research within the context of a work placement or employment should be aware that this is likely to have implications for the research and should identify what those implications are.

Sponsorship includes the grant of access to material by a responsible organisation.

[return to Question 10]

ⓘ **Guidance Note 11**
The University needs to know if the research may jeopardise its reputation through, for example, work for oppressive governments or other research relationships (e.g. work for tobacco firms) that might compromise or bias the research. Negative consequences in the form of criticism of the University or negative evaluations by students are legitimate potential outcomes.

[return to Question 12]

ⓘ **Guidance Note 12**
This includes, for example, conflicts between researchers, funders, stakeholders, employers and other research projects.

[return to Question 13]

ⓘ **Guidance Note 13**
In signifying agreement, principal supervisors are accepting part of the ethical responsibility for the project.

[return to Question 14]

Nodes

Name
○ 1.0 Year of E-banking Adoption
○ 2.0 Rationale for E-banking Adoption
○ 2.1 Internal Factors
○ 1. Reduction in operational costs
○ 2. Convenience
○ 3. Reputation Management
○ 4. Capacity Management
○ 5. Promotion of Transparent Banking
○ 6. Focus on personalised banking for high net-worth customers
○ 7. Customer satisfaction
○ 2.2 External Factors
○ 1. Merger and acquisitions
○ 2. Technological advancement
○ 3. Increased advocacy for banking automation
○ 4. Maintenace of Competitive advantage
○ 3.0 E-banking Adoption Relationship with the Consolidation Policy
○ 4.0 Banks Readiness towards E-banking Adoption
○ 5.0 Scope of Available E-banking Products and Services
○ 6.0 Most Patronised E-banking Channel
○ 3. Publicity for low patronised channels
○ 1. Advertisement
○ 2. Promotional Offers
○ 3. Telemarkeing and Customers Fairs
○ 4. Automatic registration of accounts on the online platform
○ 5. Public Enlightenment and Persuasions
○ 6. Commitment towards the provision of efficient e-banking services
○ 2. Categories of customers of most patronised e-banking channel
○ 1. Reasons for the most patronises e-banking platform
○ 1. Cash based nature of the economy
○ 2. Regulatory Framework
○ 3. Compatibility with other ATMs
○ Easy mode of operation
○ 7.0 Perceptions of banks regarding individual customers's low level of patronage of other e-banking platforms
○ 2. Security concern
○ 4. Preference for cash
○ 6. Poor Infrastructural Facilities
○ 7. Low Level of Literacy
○ 1. Doubt
○ 3. Lack of adequate internet services
○ 8. Resistant to change
○ 9. Ignorance
○ 5. Lack of enabling devices

Nodes

Name
8.0 Perceived Risks by Banks
1. Security Issues
3. Machine error
4. Resistance to change
2. Inadequate infrastructure
8.1 Perceived Risks Regarding Individual Bank Customers
1. High cost of fast and reliable internet services
2. Unstable power supply
3. Loss of personal banking information
4. Scepticism about e-banking platforms
8.2 Dealing with perceived risks
1. Constant sensitization
2. Development of a robust security system
5. Ability to boast of excellent e-banking services
6. Dialogue with the CBN
4. Use of alternate energy channels and cost effective solutions
3. Provision of complaint resolution desks
8.3 Checks and balances to curtail e-banking frauds
2. Introduction of chip and the personal identification number (PIN) card
1. Provision of Fraud Desks
3. The introduction of double authorization checks
9.0 Switching Costs Implication of E-banking
9.2 The Relational Switching Costs
9.1 The Procedural Switching Costs
3. Multi-purpose bank card

Appendix VII

ROBERT GORDON UNIVERSITY ABERDEEN

DOCUMENT ON KEY FINDINGS OF THE RESEARCH

Prepared for:

AN EXPERT WITNESS

SUMMARY OF KEY RESEARCH FINDINGS ON E-BANKING ADOPTION IN NIGERIA

Introduction: Research was conducted into e-banking adoption in Nigeria. Primary data for this study was gathered in Nigeria in 2015. This data entails both the perspectives of the e-banking service providers (the commercial banks) and the service users (focus solely on individual bank customers). The results for this study were obtained through rigorous qualitative and multivariate statistical analysis. However, in a bid to further strengthen these findings, the need for an expert feedback became imperative. The results are divided into two sections in line with the aims and objectives of this study.

Please type in your responses.

SECTION A

In comparing the starting points of e-banking in Nigeria with the UK that has recorded a relative success in e-banking adoption by individual bank customers my research reveals the following:

1. My research revealed similarities in the starting conditions of e-banking in both the UK and Nigeria. Banks in both countries had to invest heavily in ICT. Findings also show that factors that propelled e-banking take up by the banks in these two countries include: a drive towards gaining customers' loyalty, meeting the demands of the competitive market, maximising profits, etc. The disparity lies in issues regarding:

(a.) lack of preparedness by banks in Nigeria

(b.) compliance with the international standard via the CBN regulatory framework and this pressure mandated most commercials banks in Nigeria to take steps towards e-banking take-up at the expense of their capabilities which in turn impacted on the approach and subsequently affected the level of adoption of other platforms apart from the ATM.

Sir, what is your expert view on this please?

2. My research revealed that Nigerian banks seem to have leapfrogged by taking up e-banking services in which the core infrastructure in the country did not conveniently accommodate but had to comply with the dictates of the

CBN. The resultant effect seems obvious in the low adoption of other platforms apart from the ATM.

Sir, what is your expert view on this please?

3. Introducing e-banking platforms to individual banks customers is a sudden behavioural change as no previous interaction with electronic banking hitherto existed or familiarity with electronic means of transaction in other sectors of the economy. Thus affecting the level of patronage of e-banking channels other than the ATM.

Sir, what is your expert view on this please?

4. Nigerian banks had to source privately for complementary e-banking assets i.e. the internet, alternative source of energy, etc. thereby increasing the overall cost of making available e-banking services to the individual bank customers. This transfer of cost (in the form of service charge, online token fee, etc.) could have minimised the levels of e-banking adoption by individual bank customers.

Sir, what would you say about this please?

SECTION B

My study found the following three issues as generic and fundamental inhibitors of e-banking adoption by individual bank customers in Nigeria:

- ❖ Security of e-banking platforms,
- ❖ Poor infrastructure: specifically, Electricity and Internet services
- ❖ Need for strategic enlightenment of individual customers.

Sir, what would you say about these please?

And for each of the e-banking platforms, the following were revealed as peculiar predictors for higher patronage:

ATM

- ❖ *Compatibility:* My result indicates that the more individual bank customers perceive ATM as compatible to their lifestyle, the more they will keep using the platform.

- ❖ *Observability:* My study found that the more individual bank customers see others utilise this platform, they more they are influenced to keep using it.

- ❖ *Gender:* Gender difference exists in the patronage of the ATM with more males adopting this channel than females.

- ❖ *Education:* The level of education of an average individual bank customer impacts on the level of ATM patronage.

Sir, what would you say about this please?

POS

- ❖ *Trialability:* This means creating an effective avenue for individual bank customers to try out the platform will increase its patronage.

- ❖ *Procedural switching costs:* My results shows that the time and efforts require to adopt this platform impact on its patronage.

- ❖ *Compatibility:* My research finding shows that the more individual bank customers perceive POS as compatible to their lifestyle, the more they will increase patronage.

- ❖ *Gender:* Gender difference exists in the use of the POS as more males adopt this channels than the females.

Sir, what would you say about this please?

Online Banking

- ❖ *Compatibility:* My study found that the more individual bank customers perceive online banking as compatible to their lifestyle, the more they will increase patronage.

- ❖ *Procedural cost:* My research findings suggest that the time and effort required to adopt this platform impact on its patronage.

- ❖ *Gender:* My research found that gender difference exists in the patronage of the online banking, males tends to use this channels than the females.

- ❖ *Education:* My findings revealed that the level of education of customers predict higher patronage of this platform.

Sir, what would you say about this please?

Mobile Banking:

- ❖ *Financial switching Cost:* This implies that the amount of money that an individual will spend to adopt this platform impacts on its level of patronage.

- ❖ *Relational Switching Costs:* Also, findings show that the emotional and the psychological "costs" of having to detach from the traditional form of banking impact on the level of adoption of this platform.

- ❖ *Age:* My study found that individual customers that managed to use this platform are those within the age category 18 – 30years. Thus, greater patronage of this e-platform also hinges on encouraging other age groups.

- ❖ *Education:* The higher the level of education of individual bank customers, the higher level of patronage of this platform.

What are your views on these please?

Telephone Banking

My research revealed that no commercial bank in Nigeria currently provides telephone banking because of the security implications. Banks claimed that they have not really developed this e-banking platform because of the risks involved.

Sir, what would you say about this please?

EXPERT PROFILE

Full Name (optional):

Current Job Title:

Banking Experience:

DECLARATION

I understand that the research of Ibukun Sokari is on e-banking adoption in Nigeria, and the core findings of her work have been presented to me with utmost level of confidentiality. I understand that the information she has provided is for academic research purpose. I acknowledged that she solicited my consent to take part in this study as an expert witness, and my involvement is solely voluntary. I have given my views to the best of my knowledge towards her resaerch.

Signed:
Date:

Appendix VIII: *Rationale for questionnaire design*
Section 1*: Innovation Adoption based on the Rogers' five innovation attributes*

Construct	Question	Rationale	Literature Source
Relative Advantage:	E-banking is more efficient than the manual banking	This question is meant to examine customers' perception regarding their evaluation of e-banking in Nigeria. This question has been validated and used in previous research to test this construct (Moore and Benbasat, 1991).	Rogers (1995) postulated that an innovation will be adopted if it is perceived to have a relative advantage over what hitherto existed. If this is true in Nigeria, then e-banking should be embraced.
	E-banking is a convenient banking system	This question is intended to determine customers' perception of the comfort that e-banking claims to afford. Tan and Teo (2000) has validated and used this question in previous research to test this construct	Based on Rogers' (1995) postulation on relative advantage, if customers perceive e-banking to be more convenient than the manual banking system, it will be an added advantaged to be considered for its adoption.
	I spend less time on banking transactions with e-banking	This question is designed to test customers' perception on the time they spend on e-banking. Ntemana and Olatokun (2012) & Moore and Benbasat (1991) have validated and used this question in previous research to test this construct.	In line with Rogers' idea, if customers perceive e-banking to be more time efficient than the manual banking system, it will be an added advantaged to be considered for its adoption in Nigeria.
	E-banking gives me quick access to my bank account(s)	This question is intended to verify customers' perception regarding the accessibility of their bank account(s) by the virtue of e-banking. Moore and Benbasat (1991) have validated and used this question in previous research to test this construct.	Customers' ability to gain quick access to their bank account(s) may be regarded as an advantage over manual banking. This may lead to increase in e-banking adoption rates.
	E-banking allows me to manage my financial resources effectively	This is intended to determine how customers perceive their ability to manage their financial resources by the virtue of e-banking system. Tan and Teo (2000) used this question in their research to test this construct	If customers perceived that e-banking will give them effective management of their financial resources, than it will serve an added advantage to e-banking take-up (Rogers, 1995)
	E-banking gives me greater control over my finance	This question is meant to examine customers' perception regarding the control they have over their financial resources. Moore and Benbasat, (1991) have validated and used this question in their previous research to test this construct	According to Rogers' postulate e-banking adoption rate will increase if customers if it is perceived it to have a relative advantage over what hitherto existed.
Compatibility:	E-banking fits well with the way I like to carry out my banking transactions	This question is meant to evaluate the perception of customers in Nigeria regarding the compatibility of e-banking with the way they will prefer to carry out their banking activities. Moore and Benbasat, (1991)& Lin, (2011) have validated and used this question in their previous research to test this construct	Innovation such as e-banking will be adopted if it is perceived to be compatible with customers' existing way of life (Rogers, 1995)
	E-banking is compatible with my lifestyle	This is to evaluate the perception of customers in Nigeria regarding the compatibility of e-banking with their lifestyle. Lin, (2011) has used this question in a	In line with Rogers' (2005) perspective, the diffusion of an innovation should take place if the innovation is perceived to tally with the customers' lifestyle.

Construct	Question	Rationale	Literature Source
		previous research to test this construct.	
	I like to try new technology	This question is intended to examine attitude of e-banking customers regarding new innovation. Gerrard and Cunningham, (2003) used this question in a previous research to test this construct.	This is still in line with Rogers' assertion of a greater diffusion of innovation which conforms to customer's way of life.
Complexity:	E-banking requires a lot of mental effort	This is to determine the perception of e-banking customers regarding ease of use of e-banking services. Moore and Benbasat, (1991) & Tan and Teo, (2000) used this question in their previous research to test this construct.	Rogers (1995) postulated that an innovation will diffuse if customers perceive it to be easy to use.
	I believe it is easy to do my banking transactions through e-banking	This is to evaluate customers' perception regarding their ability to carry out e-banking by themselves. (Moore and Benbasat, 1991) used this question in a previous research to test this construct.	Customers' notion regarding their ability to use e-banking easily will affect adoption rate. This is in line with Rogers's (2005) ideology.
	Overall, I believe that e-banking is easy to use	This is to examine the overall perception of Nigerian bank customers regarding the use of e-banking. Moore and Benbasat, (1991) used this question in a previous research to test this construct.	Following Rogers's ideology, the overall perception of Nigerian bank customers regarding e-banking will influence adoption rate.
	Learning to make use of e-banking is easy for me	This is intended to evaluate the Nigerian banks customers regarding their perception about the learning process of e-banking. Moore and Benbasat, (1991) used this question in a previous research to test this construct.	Simple learning process of e-banking will determine the overall up-take of e-banking system in Nigeria.
Trialability:	I have had a great deal of opportunity to try various e-banking services	This is to determine the perception of customers' level of exposure to the available e-banking platforms. Moore and Benbasat, (1991) used this question in a previous research to test this construct.	Rogers (1995) proposed that an innovation that can be easily tried will diffuse easily.
	I know where I can go to satisfactorily try out various e-banking services	This question is to test Nigerian banks customers' on their perception of the awareness and their access to the available e-banking channels. Moore and Benbasat, (1991)used this question in a previous research to test this construct	The perception of customers in this regards will affect adoption rate according to Rogers.
	I have seen how others use e-banking services before using them	Ntemana and Olatokun, (2012) used this question to determine the visibility of an innovation to customers. It is believed that this will reveal customers perception regarding the visibility of e-banking services.	Scholars such as Moore and Benbasat, (1991) agreed that this construct is vital to innovation diffusion.

Construct	Question	Rationale	Literature Source
***Observability** (result demonstrability and visibility):*			
	I was influenced by what I observed as the benefits of using e-banking services.	This is to determine the perception of Nigerian banks customers regarding the level of visibility of e-banking. This question was used by Ntemana and Olatokun, (2012) in their research to study this construct.	Rogers (1995) posited that a more visible innovation will diffuse faster
	I can see the effect of my transaction immediately	This is to examine customers' perspective regarding the effect of the visibility of e-banking services. Fain and Roberts, (1997) used this question in a previous research to test this construct	This attribute of innovation according to Rogers (1995) influence an increase in adoption rate of an innovation.

Table 5.3: *Rationale for questionnaire design*

Section 2: *Cost implication for the adoption of e-banking in Nigeria*

Construct	Question	Rationale	Literature Source
***Switching Costs** (i.e. Procedural, Financial and relational costs (Burnham et al. 2003)*	***Procedural Switching Cost:*** Switching to e-banking involves hidden charges	This is to examine the perception of customers regarding the cost involved in the process of switching to e-banking. Huang and Hsieh, (2012) used this question in a previous research to examine procedural switching cost	Burnham et al. (2003) identified four aspects of procedural switching cost identified as economic risk cost, evaluation cost, learning cost, and setup cost. These are vital to the adoption of new innovation. This question tends to address the economic risk costs
	It takes much time and effort to get the information to fully adopt e-banking	This is to examine customers' perception about the amount of time and effort needed to get acquainted with e-banking Huang and Hsieh, (2012) used this question in a previous research to examine procedural switching cost	This question tends to address the setup costs and the learning costs identified by Burnham et al. (2003)
	Learning to use the services offered via e-banking takes time	This is to examine the perception of customers regarding the valuation cost of switching to e-banking.	This question tends to address valuation cost identified by Burnham et al. (2003)
	Financial Switching Cost: I may lose the benefits of the manual banking system if I switch to e-banking	This is to determine the loss of associated benefit of manual banking as perceived by customers	According to Burnham et al. (2003) the perception of customers regarding loss of benefits are crucial to switching to an innovation
	Switching to e-banking involves some upfront costs	This question is to examine the customers' perception of the monetary loss of switching to e-banking Huang and Hsieh, (2012) used this question in a previous research.	The perception of customers regarding the monetary loss of switching to an innovation will influence its uptake (Klemperer, 1991) & Burnham et al. 2003)
	Relational Switching Costs: I like a face to face interaction with my bank officials	This is to determine the perceived emotional attachment customers may have with the traditional banking system. The value a customer attached to this may debar them from switching to e-banking that is basically self-service	Okechi and Kepeghom (2013) and Yaqub et al. (2013) found a disparity in the usage of the available e-banking channels in Nigeria.
	I have overtime enjoyed the personal relationship I have	This is to examine the perceived value customers attached to the relationship they have built with their bank officials	The CBN report (2013) indicated that ATM is the most adopted e-banking. While ATM allows a 24hours access to cash,

Construct	Question	Rationale	Literature Source
	built with my bank officials		customers still have to leave the comfort of their homes to utilize this machine.
Acceptable devices	I do not think I have the devices to do e-banking	This is to evaluate the perception of customers regarding their readiness for e-banking.	Liberalization of telecommunication sector in Nigeria ushered in electronic communication devises that supports e-banking (Obe and Balogun, 2007).
	I do not have access to internet facilities	This is to examine the perception of customers regarding their access to internet facility: a major backbone for e-banking transactions	Nigeria is Top 10 internet user in Africa (The statistical Portal, 2016)
Helpline Contact Cost:	The call rates to my bank's customer service unit is high	This is to determine customers' perception of the cost of contacting the customer service unit should the need arise.	Liberalization of telecommunication sectors left the provision of telecommunication services in the hands of private companies (Obe and Balogun, 2007).
Helpline Contact Cost:	The customer service unit contact line of my bank is often not available	This is to determine the perception of customers regarding the availability of helpline service line in times of emergency	A customer may be reluctant of switching where doubt arises Klemperer, (1991)
Usefulness of available services:	The available e-banking platforms are not useful for me	This is to examine customers' perception regarding the available e-banking platforms	ThisDay Newspaper Nigeria (2013) reported low patronage of other many e-banking platforms
	I do not need many of the e-banking platforms	This is to examine customers' perception regarding the available e-banking platforms	ThisDay Newspaper Nigeria (2013) reported low patronage of other many e-banking platforms
Available Complementary Assets	Which of the following electronic devices do you have access to: Landline, Mobile phone, iPad, Laptop, Desktop computer	This is to examine electronic device(s) that an individual bank customer possess that supports e-banking transactions	There is high inflow of electronic devices in Nigeria (Obe and Balogun, 2007).
	How often do you access the internet?	This is to examine the available of internet as a complementary asset to e-banking adoption for individual bank customer	Studies show that Nigeria is Top 10 internet user in Africa (Internet World Statistics, 2012)
Level of patronage	How often do you use each of the following e-banking platforms do you use: ATM, POS, Online/Internet banking, Mobile banking, Telephone banking.	This is to determine the level of usage of e-banking platforms by customers	Studies found that e-banking channels except ATM are hardly patronized CBN, 2013)

Source: author generated.

Appendix IX: *Rationale for the Interview Questions*

Section	Question	Rationale	Literature Source
Section One: E-banking Take-up by banks	When did your bank adopt e-banking	To examine if the bank was part of the innovators of e-banking or later follow suit	Rogers (1995) described innovators as risk takers with high financial liquidity
	What would you describe as your bank's rationale for the adoption of e-banking	To determine whether it was a voluntary take up or as a result of other external factors	Liberalization of the telecommunication sector (Obe and Balogun, 2007), enactment of banking reforms (CBN, 2006) and the need for a payment system that is nationally utilized and internationally recognized (CBN, 2013) were noted as some of those driving forces to e-banking take-up in Nigeria.
	Is there any relationship with e-banking take-up and the 2004 consolidation policy	To verify whether the 2004 consolidation policy served as a catalyst to e-banking take-up by banks	Chiemeke et al (2006) and Adepoju and Alhassan (2010) viewed e-banking as a means for Nigerian banks to survive the post-consolidation era
	How would you describe the readiness of your bank to e-banking take up	This is to examine the available complementary assets of the bank at the start of e-banking	Akinyomi and Tasie (2011) pointed that poor telecommunication networks existed in the country at the very start of e-banking
Section Two: Available e-banking channels and levels of patronage	What are the e-banking channels that your bank provides	This is to determine e-banking services provided by the bank	Siyanbola (2013) noted the availability of e-banking channels in Nigeria such as POS, ATM, Oniline banking, telephone banking
	Which one of the e-banking channels is most patronized	This is to determine which e-banking channel is mostly patronized	Yaqub et al (2013), Siyanbola (2013) and CBN, (2013) reported ATM to be the most used e-banking channel
	What kind of publicity has your bank given to e-banking to encourage adoption	To determine the efforts of banks to e-banking education	Ayo (2010) pinpointed lack of awareness as limiting factor to e-banking adoption. GTBank amongst others claimed they have made conscious effort to sensitize customers to using all the available e-banking platforms (Promo Nigeria, 2012) and ThisDay, 2013).
	What factors would you consider as responsible for the low patronage of e-banking channels that are less patronized	To determine banks awareness of the difficulties customers may have in using the less patronized channels	Lack of e-payment structure, perceived risks, and lack of awareness hinders e-banking adoption (Ayo, 2010)
Section Three: Perceived Risks	What are the perceived risks to e-banking take up	To find out whether banks have been able to identify risks associated with the provision of e-banking services.	Perceived risks have been identified by scholar such as Ayo, (2010) as a hindrance to e-banking spread
	Are there any perceived risks your bank has identified regarding your customers?	To find out whether banks are conscious of customers perceived risks	Perceived risks have been identified by scholar such as Ayo, (2010) as a hindrance to e-banking spread

Section	Question	Rationale	Literature Source
	How has your bank been able to cope or deal with identified risks	To find out the contributions of banks to solve this problem	Some back have introduced promotional offers (Promo Nigeria, 2012)
	What are the checks and balances to curtail fraudulent transactions	To find out banks efforts to allay customers fear in terms of the security measures	GTB reiterated the benefits of other e-banking channels and declared them safe and secure (ThisDay, Newpaper 2013)
Section Four: Cost implication for e-banking adoption by individual customers	What are the processes for a customer to switch to e-banking?	To investigate the modalities involved in switching to e-banking.	Complex switching processes could discourage adoption of e-banking platforms according to Rogers'(1995) postulations
	What are the cost implications for a customer to switch to e-banking	To find out whether banks have taken into consideration the cost implication for e-banking uptake in Nigeria by customers	The analysis of the Rogers (1995) five construct innovation diffusion seems to suit Nigerian situation where e-banking is concerned but cost implication has to be revisited
Section Five: Respondent profile:	What is the name of your bank	This is to help with the classification of the bank into the category	CBN (2013) classified the existing commercial banks in Nigeria into 3 tiers; Tier 1, Tier 2 and Tier 3
	What is your job title?	This was included as part of the demographic characteristics to ensure that respondent were the needed expert for this study	Demographic data assess who to survey and enables a breakdown of overall survey response data to a useful group of respondent (Wyse, 2012)
	How long have you been working for the bank?	This was included as part of the demographic characteristics to ensure that respondent were the needed expert for this study	Demographic data assess who to survey and enables a breakdown of overall survey response data to a useful group of respondent (Wyse, 2012)

Source: Author generated.