

**LONDON SCHOOL OF BUSINESS AND FINANCE**

**MOBILE BANKING ADOPTION AND CONSUMER BEHAVIOUR**

**IN**

**NIGERIA**

.....  
[.....]

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## **DEDICATION**

This study is dedicated to the Almighty God for His love, provisions, guidance and help towards the successful completion of this research work.

## **ABSTRACT**

This dissertation is a research into the mobile banking adoption among bank customers in Nigeria. There is a plethora of literature available on various online banking services and consumer adoption. However, the literature on mobile banking services in case of Nigeria is limited to a few, which justifies the need to carry out this research.

In line with existing literature, the dissertation applies theoretical frameworks which have been developed from existing literatures on innovation of adoption to collect the responses from 270 users and non-users of mobile banking services in Nigeria. Each respondent provided answers for various eight dimensions of the questionnaire namely awareness, perceived usefulness, perceived ease of use, compatibility, social influence, perceived credibility, perceived self-efficacy, and perceived financial cost. The results of these findings reveal that each factor has some level of significance effect on consumer intention to adopt and use mobile banking in Nigeria. These factors could influence consumer intention to adopt and use mobile banking facilities. All these factors, if well managed by the banks could influence the adoption of mobile banking and create more opportunities for banks to gain more market shares and invariable increase customer satisfaction.

The major setbacks of the banking industry towards the adoption of mobile banking in Nigeria are perceived credibility and perceived financial cost, and as a result of this, Nigerians have formed a negative behavioural pattern towards mobile banking. In addition, the findings show that, perceived credibility and perceived financial cost have a stronger effect on consumer intention to adopt and use mobile banking service than perceived usefulness and perceived ease of use.

It is, therefore, recommended that banks in Nigeria should create more awareness through personal interaction with customers, develop quality initiatives in order to build

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customer's confidence and equally, banks should also review the cost of mobile banking service in Nigeria.

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# CHAPTER ONE

## INTRODUCTION TO THE STUDY

### 1.0 Introduction

This chapter provides an overview of the mobile banking and an introduction to industry background. It also looks into the research objectives and aims which will lead to the research question for the proposed study.

### 1.1 Overview

The world has become a global village and almost everything are been done through technology. The growth of information technology (IT) in the world is becoming a crucial factor in the future development of businesses and industries around the world. The traditional method of banking is gradually paving the way for modern method of banking in the 21<sup>st</sup> century. The traditional banking has been in existence for many decades now and is the most common method of carrying out bank transactions in different countries, both developed and undeveloped (Luaran & Lin 2005). Over the past few years now, there have been continuous development of information technology (IT) to help smoothen business operations around the word especially in the banking industry where the use of Automated Teller Machine (ATM) was developed to make withdrawer of money easier for customers, secondly, the development of internet banking was also introduced and thirdly, the use of mobile banking. Both the developed and undeveloped countries have been benefiting from this new technology. Commerce is described as the conducting of business transactions, sharing of business information and maintaining of business relationship (Zwass 1996).

Customer's satisfaction holds the potential for increasing an organization's customer base, increase the use of more volatile customer mix and increase the firm's reputation (Fornell, 1992, Levesque and McDougall, 1996). An organisation must know what their

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customers want and must be able to satisfy their demands. The use of mobile banking in Nigeria is not well pronounced like other developed countries of the world and the banking industry should have a larger part to play in this. Today, the incorporation of IT have change many ways businesses are been carried out in all over the world, and it has subsequently changed the way businesses are been conducted and managed (Ngai & Wat 2002; Delone & Mclean). Today in Africa, Nigeria is regarded as one of the fastest growing telecommunication nation. The fast growth of mobile phones in a developing economy such as Nigeria which is most likely have caused the increase in the number of mobile users to exceed the numbers of banks (Porteous 2006).

The mobile commerce involves such applications like mobile banking, mobile payment, mobile marketing (Varshney & Vetter 2002; Ngai & Gunasekaran 2007). Mobile banking involves mini-statements and checking of account history; alerts on account activity or passing of set thresholds; monitoring of term deposits; access to card statements; mutual funds/equity statements; insurance policy management; pension plan management; access to loan statements; status on cheque, stop payment on cheque; ordering check books; balance checking in the account; PIN provision, change of PIN and reminder over the internet; domestic and international fund transfers; recent transactions; due date of payment; micro-payment handling; mobile recharging; commercial payment processing; bill payment processing; peer to peer payments; and deposit at banking agent (Mohammad 2010). Mobile banking is allowing customers to receive a text message showing their account balance. It is been claimed that mobile banking has spread around the world and it has brought about positive change from the customers perception, could this be concluded about Nigeria as well? In the case of Nigeria the subject matter has gain little or no attention in the literature, therefore, this research will bridge the gap. This research will contribute to the adoption literature which relates to mobile banking in a developing economy.

## **1.2 Industry Background**

Gray (2005:1) reports that in year 2004 alone the African continent was able to add up to fifteen million new mobile phone subscribers to its base, which is equivalent to the total number of telephone subscribers on the continent in 1996, which can be seen as growth. The Global System for Mobile Communications (GSM) is said to represent over 50% of the world mobile phone subscribers is the prevailing mobile standard in Nigeria (Obe & Balogun 2007). In 2002, mobile phone subscriber was about 1.5 million (Tribune 2003). The use of mobile phone has been used for various purposes including communication, business and others. The benefit of using a mobile phone has been widely accepted as a popular means of carrying out bank transaction in various countries of the world. In spite of growth and the wide spread of mobile banking in the world it could be argued that its usage and popularity as far as consumer adoption is concerned is hardly true in Nigeria therefore need to ascertain this claim arises (Adesina et al. 2010). Very few literatures have taken the issue of mobile banking in Nigeria into consideration when addressing the issue of mobile banking and this is rather unfortunate. The impact of innovation can be felt by consumers who are the targeted individual (So et al. 2005). And this follows that adoption itself is influenced by individual decisions to accept and use any products or services that is newly introduced (Lockett & Littler 1997).

The high growth of mobile phones in Nigeria means that the number of mobile users may already have exceeded the number of banked customers in a different region of the country. Mobile banking will reduce the cost of financial transactions for their customers, help banks to increase customer satisfaction in the way banking transaction is been done, allow new entrants to the financial sector and also help banks to increase their sales and reduce cost. It could be argued that banks are not providing enough awareness and motivation to their customers to encourage them to take mobile banking

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seriously. Customers or prospective customers need to be motivated or encourage in taking up this new initiative. This could be due to many reasons such as illiteracy, poor communication system, etc., in such developing country. This new development from the banking industry could enhance good customer satisfaction and make banking transaction more easy and convenient (DFID 2006).

### **1.3 Research Objective**

1. To explore the consumer behaviour adoption in the area of mobile banking in Nigeria.
2. To bridge the gap which exist for developing countries by focusing on Nigeria to examine how mobile banking initiative is functioning.
3. To address the issue on the literature of mobile banking which is perceived to be lacking?
4. To increase the awareness of the perception of customers to mobile banking service providers.

### **1.4 Research question**

1. What is the level of consumer's knowledge about mobile banking in Nigeria and its comparison with the current adoption rate?
2. What are the factors influencing consumer behaviour adoption of mobile banking in Nigeria?

### **1.5 Research aim**

Over the years many in-depth research has been conducted in the literature to investigate adoption of an innovation, of which the broad area of electronic banking which encompasses internet banking, use of ATM, mobile banking and others (Amin 2007; Howcrof et al. 2002; Luarn & Lin 2005). Most of the past research work has



focus on developed countries and so therefore, this research work will bridge that exit between developed countries and developing countries by investigating consumer knowledge and the factors necessary to influence of mobile adoption in Nigeria.

## **1.6 Significance of Study**

The finding from this research work is expected to contribute to the adoption literature in the area of mobile banking and in the developing nations. More specifically, to bridge the gap that exists for Nigeria by serving as a starting point for further research. The findings from this research study can be used by banks to improve mobile banking facilities and to identify those factors that can either contribute to the failure or success of the mobile banking industry and this could be further used for decision making.

## **1.7 Research Methodology**

The theoretical framework has been developed through secondary data from related source and the questionnaires are developed from the theoretical framework which has been adopted in this research work. The theoretical frame work addresses the factors influencing consumer adoption of mobile banking in Nigeria. Quantitative and qualitative approach was considered very useful for this research work. The research instruments were telephone interview, open-ended and close ended questions. Semi-structured telephone interviews were used to enrich the researcher's understanding with the help of three electronic bank officers selected from three banks within the state capital. The questionnaires address to the customers of the banks was open and close ended questions allowing the participant's to share their view. The data collected from respondents through the questionnaire will be analysed using Statistical Package for Social Science (SPSS) software.

## **1.8 Structure of the Study**

This dissertation has been structured to contain five chapters.

Chapter one contains introduction, industry background, research objective; it goes further to highlight the research question and the research methodology.

Chapter two contains the literature review that talks about mobile banking in Nigeria. The mobile banking market, present practice of mobile banking in Nigeria. It will also look at some basic aspect on mobile banking in order to have more understanding on the issue of mobile banking. It goes further to review theories on innovation adoption model and other studies on mobile banking adoption which serve as a basis for the research framework.

Chapter three explains the research methodology, the method used and the purpose of using such method taking into consideration its strength and weaknesses. It also looks at the way the data was analysed and the methodological limitations in the research work.

Chapter four contains the analysis and the interpretation of data. It goes further to compare the findings of the present research with the past once.

Finally, chapter five will contain the conclusion, recommendations and limitations of this study.

# CHAPTER TWO

## LITERATURE REVIEW

### 2.1 Introduction

This chapter contains the literature review which begins with the introduction of mobile commerce which is narrowed down to mobile banking industry. The mobile banking market, mobile banking in Nigeria and the mode of mobile banking operation were also discussed. It looks at the technology employed by banks in carrying out mobile banking services. The diffusion, adoption and development of mobile banking were also discussed. It goes further to explain the adoption phase which has pulled attention in the literature of innovation adoption theories and other related research conducted in the past years and the recent once. This will serve as a frame work for this research work.

### 2.2 Introduction to M-Commerce

Mobile commerce (M-Commerce) is an extension of M-Commerce, and these allow consumers to interact with other one another or businesses in a wireless mode, anytime and in anywhere. The use of mobile phone for buying and selling of goods and services is regarded as mobile commerce. M-Commerce is usually called mobile commerce, which allows customers, to make any kind of transaction including service enquiry, transferring of money, buying and selling of goods through internet service on the mobile phone. Mobile commerce has its own drawback, though it's slowly, but definitely, portraying signs of strong recovery (Tiwari & Buse 2007). Mobile commerce has been used interchangeably, and this is sometimes misused and confused with mobile banking, this is therefore, important to put more clarity on m-commerce which is a subset of Mobile Business (Cronin 2004). Mobile business is activities carried out by organisations to sell goods and services such as those commercial and other processes;

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human resource management (HRM), customer relationship management (CRM), procurement and production while M-Commerce involves buying and services, and other activities which are associated with such transactions in the business segment and consumer segment. M-Commerce is been adopted just as E-Commerce though it's slower and the extent of progress are different in all part of the world (Deans 2002). Japan and Europe are taking the lead because of their decision to establish a single wireless standard (Dean 2002; Coursaries et al 2004).

The word mobile is related to mobile businesses which connote the possibilities of having access to business activities anywhere and anytime in the world and which is managed by computer mediated network. The facility makes service availability to independent of user's geographically location as oppose to electronic (Stanoveska-Slabeva 2003). Mobile commerce comprises of Mobile banking, innovation driven by the banking industry, and others such as mobile entertainment, mobile marketing and advertising, mobile information services, and mobile ticketing (Tiwari & Buse 2007). The mobile commerce has its unique features which give it an edge over other form of commercial transaction; these are instant connectivity, immediacy, localization, pro-active functionality, ubiquity and simple authentication procedures (Tsalgaidou & Pitoura 2001).

### **2.3 Mobile banking: M-Commerce in the banking sector**

Mobile commerce is a broad term that encompasses all forms of interaction with a consumer through a mobile device, such as issuing electronic coupons, providing loyalty services, and creating dedicated websites that a specifically designed to facilitate mobile browsing (Alex 2010). In the banking industry, services that are finance-related which involves mobile telecommunication technologies is known as Mobile financial services. These services are therefore categorised into mobile payment and mobile

banking. In regards to this research we will focus on mobile banking. Mobile Banking is a type of m-commerce service that allows consumers to perform banking services (i.e. alerts, banking transactions and balance enquiries) with the use of their mobile devices (Corbitt and Barnes 2003). It is very important to understand what banking business is all about. Banks are businesses that deal in money (Hammonds 2006:4) therefore banking involves any service given and received from the bank, people open accounts with banks to save money, other people go to the bank to borrow money (Sobczak 1997:6).

Mobile banking could be defined as a facility which provides banking services such as balance enquiry, funds transfer, bill payment, and transaction history via a user's mobile phone (Stair & Reynolds 2008). Kondabagil (2007:24) defines mobile banking as an occurrence 'when customers access a bank's networks using cellular phones, pagers, personal digital assistants, or similar devices through telecommunication wireless networks'. Mobile banking (m-banking) could also be defined as an application of mobile commerce that enables customers to bank virtually at any convenient time and place (Suoranta, 2003). Tiwari et al (2006a:5) believes that 'a cornerstone of m-commerce is built by m-banking'; many banks are taken advantage of this innovation in order to increase customer satisfaction, manage cost, increase profits and bring positive transformation of payment system in the economy (Thisdaylive 2011). In 2004, Finland-based Nordea bank experiences a high growth of 30% from the utilisation of transaction-based mobile financial services (Atkins 2005). Mobile Banking as the term connotes is banking "on the move" with the aid of a mobile telecommunication device (Ciuci 2010) which can be used for a different purpose at anytime and anywhere. Mobile banking (M-banking) allows customers to receive short message (SMS) through their phone, wireless application protocol (WAP) and Java enables phone support other banking activities using GPRS (General Packet Radio Service) such as direct payments

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confirmation and funds transfer (Mallat et al 2004). From research 30 per cent of households in the United Kingdom use their mobile phones to perform banking operations (MMA 2009). Research also shows that, internet has only a penetration rate of 6 % in a population of 140 million in Nigeria but mobile technology is close to 50 per cent penetration with prospects for growth (Ciuci 2010). Mobile devices show a promising way to the future which can reach larger population of customers irrespective of their location and this can lead to customer's loyalty.

Mobile banking has been said to have brought about positive shift in customers perception but could this be true about Nigeria? Much attention has not been given to the subject matter and there is a lack of empirical research on the adoption of mobile banking in Nigeria, so therefore this research aim to bridge the gap in the subject matter. Many researchers have given proof of the advantages that can be derived from using mobile banking services (Barnes & Corbitt; Herzberg 2003), which consumers can derive when there is willing to adopt the facility of the services. Over the years there has been several challenges which the banks have been facing over poor information technology system and the new technological development such as the introduction of Universal Mobile Telecommunication System (UMTS), banks can fully take advantage of this new platform for realistic mobile applications which have been made available (Tiwari et al 2006a).

## **2.4 Introduction to Mobile banking**

The banking industry in recent times has been undergoing radical change and this is taking place in all aspects of the banking sector. One of these new changes in the banking industry is the information technology system (IT) and is mainly used by banks to reduce turnaround time and improve business in general. The introduction of mobile technology and its devices have indeed brought about efficiency in the manner in which

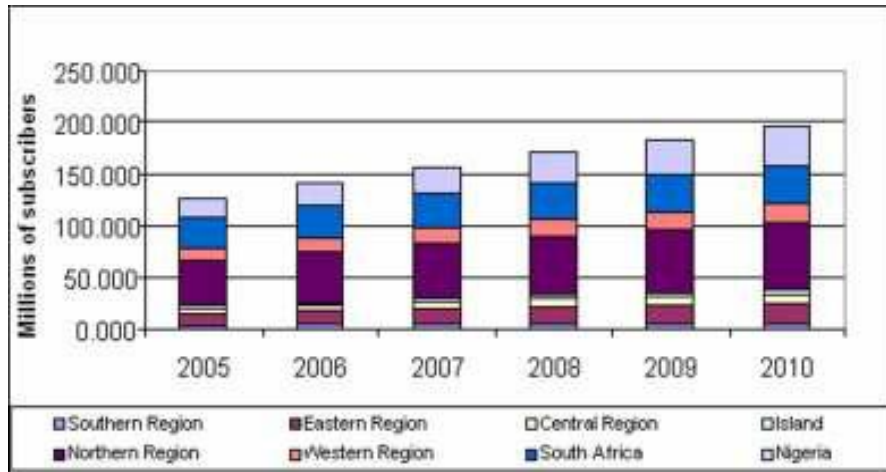
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commercial and business activities are been carried out (Tiwari and Buse, 2007; UNCTAD, 2007). Among this technological development is the introduction of mobile telephony. Mobile telephony serves as a platform for launching out innovative mobile phone applications and services (UNCTAD, 2007). The use of mobile technologies for commercial purpose has generated the concept of mobile commerce. Mobile banking is an application of mobile commerce which enables customers to bank virtually at any convenient time and place (Suoranta, 2003). There has been evidence of increase in the number of people subscribing for mobile phone in developed and developing countries (Boadi et al., 2007; UNCTAD, 2007). The fastest growing market in the world now is the mobile industry (Gupta, 2005; UNCTAD, 2007).

## **2.5 The Mobile Banking Market**

The introduction of mobile banking to the banking sector has brought about efficiency in the way banking business and commercial activities are been performed (Tiwari and Buse, 2007). There has been unprecedented growth in the m-banking market in many nations. Research shows that 30 per cent of households in the United State of America use mobile phones to perform banking services. This is also the case in European and Asian countries where 80 per cent of households use mobile banking services (Gupta, 2005). Presently, mobile phones are the most popular means of communication technology in Africa (ITU, 2007). This is shown below.

**Figure 1.0: Mobile phone subscribers in Africa**

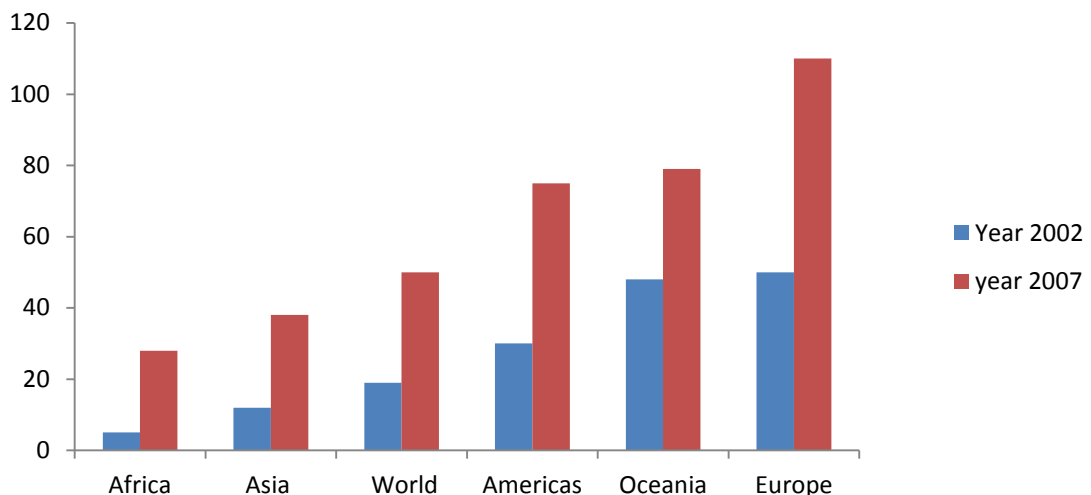


Source: African cell phone subscribers, BMI-T

### 2.5.1 Mobile banking penetration

Mobile phone has continued to witness a drastic change in growth across the world (UNCTAD 2009), and its growth in the ICT is said to be the highest in the developing countries of the world (PN 2006). As at 2008, there were 60 mobile phone subscribers per 100 inhabitants globally (Ibid). The figure below shows mobile phone subscription by region.

**Figure 2.0: Global mobile phone penetration by region**



Source: ITU (2009)

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As show in the figure above, from 2002 to 2007, it shows that African has the lowest mobile phone penetration while Europe has the highest. Looking at the growth rate in Africa it shows that African have about a third of the continent's population (Ibid) but in North Africa it has about 2/3 of its population. Countries like South Africa, Nigeria and Egypt have the highest mobile market growth (AMF 2008). Due to the high rate of mobile phone penetration in Europe, there have been more users of mobile banking services.

As at 2009 mobile phone has 4.6 million subscribers in the world which the most popular form of personal communication device.

### **2.5.2 SMS and MMS Penetration**

SMS is a widely used service and is working with all type of phone (Barnes 2002; Xu et al. 2003; Merisavo et al. 2007; ME 2010). SMS is the most popular (Scharl et al. 2005; Verkasalo & Hammainen 2006) and equally the most preferred mobile phone service (Frost and Sullivan 2009) used all over the world. In the United State, over one trillion SMS were sent (Frost & Sullivan 2009) and in 2009, UK sent 96.8 billion (MDA 2010) while in Asia 1.9 trillion SMS were sent (Anand 2009). Consumers are more likely to shows positive disposition towards SMS banking in this region due to its usage and familiarity with the service. With SMS gaining popularity in African regions (UNCTAD 2009) such as Nigeria, Egypt, and South Africa the high rate of SMS (PR 2007) it is likely to have a positive behavioural response from such customers due to the high SMS penetration rate.

The use MMS started off at a lower rate (PR 2007; INT 2008) which is due to the level of technology available in such country. At the middle of 2009 in the US, 10.3 billion MMS were sent (Comverse 2009) and in the UK, 601 Million MMS were also sent

(MDA 2010). This shows that countries with high MMS usage are likely to experience positive behavioural response in the use of mobile banking service.

### **2.5.3 Mobile Banking In Nigeria**

Mobile banking was another step after the introduction of internet banking and it has taken banking into another different level. M-banking had made banking services more convenient, faster, given easy accessibility and reducing the stress of visiting the bank's branch thereby making transaction possible anywhere regardless of where the branch of the bank is located (Babalakin & co 2002). The merger and acquisition that took place in Nigeria in 2004 where 24 banks were consolidated and this brought a revolutionary land mark in the banking industry in Nigeria (Ahmed 2010). This revolution brought about a drastic change in the way banking business and transactions were done and it led to the adoption of Information and Communication Technology (ICT) which was encouraged by the Central Bank of Nigeria (CBN) for the efficient and effectiveness of making banking transactions viable. The advent of this brought about

Presently in Africa, mobile phones are the most widely used medium of communication (ITU, 2007) and is widely used by both the illiterates and educated people. This has enabled the mobile market industry in Africa to be the fastest growing in the world when compared with other continents (ITU, 2007). According to research, Nigeria is one of the leading market players for m-banking applications in Africa (UNCTAD, 2007), and is the fastest growing telecommunication country in African. This is attributed to the following factors:

1. As at today Nigeria is the fastest growing telecommunication infrastructure nation in Africa and research also shows that, Nigeria is the third in the world (Ayo et al., 2007).

2. There is an increase in the population figure of Nigeria and with about 150 million of people as at 2009 and is expected to reach 155, 215, 573 by July 2011 (CIA 2011), been the most populous country in Africa (Muganda et al., 2008).

3 Presently, Nigeria is leading the mobile commerce usage in Africa (Muganda et al., 2008).

4. The largest subscriber of mobile user in Africa is Nigeria with about 70 million mobile subscribers (ITU, 2009; ICT works, 2010).

Mobile telecommunication device is one of the most convenient means to provide mass market as against branch banking in Nigeria. According ITU, as at December 2009, Nigeria has 23,982,200 internet users out of a population of 149,229,090 million which is 16.1 % while mobile technology is close to 50 per cent penetration with prospects for growth. Research shows that Nigeria is the fastest growing telecommunication market with 72.6 million subscriber's base as at 2009 and by 2014 it is expected to reach 128 million. Presently in Nigeria there are 24 banks after the consolidation in 2004 (Ahmed 2010). There is high completion in the Nigerian banking industry and this has brought about innovation and many banks are investing into ICT facilities to override the traditional banking system. Before the consolidation of banks in Nigeria, transactions were only possible within the same branch and they could only deal with their own customers but after the consolidation competition rose up and there was a rapid development of ICT facilities and the banks moved from offline to online thereby making it possible to complete transactions from anyway regardless of which branch of the bank the actual account is domiciled (Babalakin & co 2002). Over the past few decades now, the banks has moved from the traditional method of customers queuing at the banking hall to make transaction to modern day banking system (Ciuci 2010) where banking activities are been done through a better and faster means with the use of the internet. The electronic banking came up as a replacement to the traditional banking

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method with the aim of reducing the amount of time used by customers, make transaction convenient and easy for customers and making it possible for customers to carry out their transaction in any branch of the federation in Nigeria.

#### **2.5.4 Consumer behaviour towards mobile banking**

Lamb, et al. (2000:142) define consumer behaviour as the acts of decision-making which directly involve the obtaining and using need-satisfying products and services, which includes the decision-making process which precedes and determines these acts. According to Rice (1997:78), consumers are people who use products and services and who make payment for those things which are bought. There are two kinds of consumers according to Schiffman and Kanuk (2000:8); we have personal and business (organisational consumers). The buying of equipment, products, services, etc. just to facilitate their business is called business consumers while personal consumers are those individuals who buy goods and services for their own consumption. The act of obtaining and using economic goods and services is also referred to as consumer behaviour according to Block and Roering (1979:132). Consumers involve in decision making process when they are making purchases either online or in store and banks can study these customers profile to have a better understanding of who their customers are, which will help them know the factors influence their purchasing behaviour and the challenges face during an online transaction.

There are several predetermining factors that influence consumer attitude towards mobile banking and researchers have found out that motivation, demography and individual acceptance of new innovation or technology are some of the major causes. In developed countries, consumer's attitude may be influence by previous experience in related technology and it has help to increase the adoption rate due to previous experience but, this may be slightly different in the developing countries were

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technology is just taking its stand. According to Benamati & Serva (2007), many bank customers have to consider the issue of hacking, the integrity of the password been used, data encryption and personal protection of information when it comes to adoption of electronic banking. This and many more are the challenges faced by bank customers and this has either affected their decision positively or negatively.

## **2.6 Modes of operation by providers**

A wide range of mobile/branchless banking ideas are currently been established now. Three models have been identified and developed, and they are primarily different from one another based on who established the relationship (Banks or the Non-Bank/Telecommunication Company) of account opening, deposit or withdrawer, borrowing, etc., with the customers. There are differences in the Bank-led model, Bank Focused model and Non-bank-led model (Porteous, 2006; Anyasi & Otuba 2009).

### **2.6.1 Bank-led model**

This is when customers perform transaction with the use of their phones, which is different, from the branch-base with the help of a trade partners. This is an alternative to conventional branch-based banking. This method could be created by joint venture between banks and telecommunication company's'. This system allows customers account relationship to be established and managed by the bank (ibid.).

### **2.6.2 Bank-focused model**

The bank focus model is when a traditional banks decides to use the low-cost delivery channels, which is a non-traditional banking system to provide banking services to its customers such as the use of m-banking facilities, automatic teller machine (ATMs), internet banking, e.tc., The bank-focus model is additive in nature and is an extension of the conventional branch-based banking (Porteous 2006).

### **2.6.3 Non bank-led model**

The non-bank-led does not get involve unless required to do so when the need arises as a safe keeper of surplus funds, and this allows the telecommunication company handle all the functions (Aguirre et al 2008). However, mobile banking services that are focused on low income earners of the population size which are regularly found in the rural area will need to rely on retail outlets. A lot of telecommunications agents operate through their airtime resellers while banks uses bakeries, pharmacies, e.tc which can be found in some countries such as Colombia (ibid.).

## **2.7 Technologies employed to provide mobile banking services**

Mobile banking services could be used through more than one channel such short messaging service/messaging and application download (client-based) (Tiwari & Buse 2007; Information gatekeepers 2007).

### **2.7.1 SMS – Short Messaging Service**

This is where the customers communicate with the bank through their mobile devices by sending an SMS (short messaging service) to the bank. The short messaging service (SMS) works in two ways, and it can be either a pull mode or a push mode. In the push mode, the mobile customer send a text message to the bank which contains a service command with a predefined request code to the bank's specific number. The bank also reply with SMS containing the specific information requested from the bank while the pull mode is when the banks sends a text message to the subscriber (customer) to inform the customer about certain transaction that have just taken place over the account. The message could be inform of an MMS (multimedia message service) or SMS (short message service) they both work similarly even though the use of SMS is more popular (Tiwari & Buse 2007). This is commonly used in Nigeria by mobile banking customers.

### **2.7.2 Client-based**

This method requires the customers to use software installation, and this will serve as a user interface that can allow customers to use the mobile device while offline to access some basic transactions before going online. Typing details before connecting to the internet could reduce cost (ibid). This client based application is particularly useful because it allows customers to stay offline and while preparing transaction such as entry of account details and afterwards the transmission is made by sending out the data, this banking process conducted offline reduces online connection time and cost (Dilg et al., 2004, p. 17).

### **2.7.3 Browser-based**

Browser-based customer needs to be connected to the internet to use this service. The interface is generated from the server which is transported to mobile device, and this allows the content to be displayed through the browser. This method is extremely fast depending on the server that the customer is connected to but one its disadvantages is that, it requires the subscriber (customer) to stay online all through the transaction process and could lead to higher cost for the customers (Tiwari & Buse 2007).

## **2.8 Diffusion, adoption and development of mobile devices which provides support for m-banking**

The mobile phone has been the tool driving the mobile banking initiative as its use has continued to grow (Kreyer et al 2002). The use of mobile phone in mobile banking is far growing now that even countries with poor infrastructure are now using a mobile phone for their communication and business transactions. The inexpensive nature and low maintenance of this device have prompted many into using it unlike the use of lap tops, desktop, e.tc, which are quite expensive to get and to maintain. The trend is still on which is towards joining the mobile phones and electronic devices like Personal Digital

Assistant (PDAs) together to give a brilliant combination of mobile devices, such as the innovation of multifunctional phones like smart phones (e.g. Apple's iPhone) which has the combination of cell phone capabilities, PDA and wireless email (Deans 2002).

The growth of mobile phone varies from countries to countries, in German at least 87% while 79% for South Koreans are reported to have own a mobile phone (Tiwari et al 2006b). This show a high adoption rate of mobile banking and the use of mobile phone have been used to that advantage. The developed countries easily adopt new innovative than developing countries although there are evidences that some developing counties are experiencing high adoption rate such as China (Donner 2008). According to International Telecommunication Union (ITU) report, Africa and Asia has benefited from this innovation, and is changing people's live and has brought about opportunities for mobile commerce (ITU 2008B; ITU 2008C). New mobile devices which are been developed can enable data transmission with the introduction of UMTS (Universal Mobile Telecommunication system), this is a third generation (3G) technology which is an improvement over the 1G, 2G, 2.5G and 2.75G (Tiwari et al 2006b). Presently, the 4G mobile is been introduced to the world and countries like Sweden, Germany and United States have rolled out the new technology which is faster, a lot cheaper and has more capacity than 3G but for UK it is expected to be used in 2013 though it is been tested in London by O2 (BBC NEW 2011), While developing countries like Nigeria, Philippine and Sri-Lanka have introduced 3G networks (Telecomsinsight 2008; ITU 2008a) and have started using it.

## **2.9 Advantages of mobile banking to providers and consumers**

The use of mobile phones has a positive and significant impact on a country's economic growth, and its impact may be as twice as large in developing countries as to developed countries (ITU 2005, Salzaman et al 2001). Mobile banking is fast growing and is



moving at a fast rate. The fast development of information technology in the global world has paved way for the development of this sector. The banks were faced with different challenges as a result of the large increase in their customer base in the past few decades, and these has brought about many innovative products and services which could foster the rapid development of the banking sector. And one of such innovation is the mobile banking which is targeted at three different categories of people between the ages of 14 & 18 years; secondly the young adult and thirdly, the business people (Muller-Veerse 2000). Mobile banking has many benefits for both the banks and the customers.

### **2.9.1 Benefits to banks**

The mobile banking is expected to increase customer satisfaction, reduce the cost of distribution, e.tc, but trust and credibility has been the greatest challenge of mobile banking from their provider (Oxford business Group 2008; Langendoerfer 2002). And many effort that are been made to increase customers awareness and confidence in online facilities for banking appears insufficient (Merry 2005). The higher the number of people using mobile banking, the higher the money saved. According to Robinson (2000:105) the cost of making electronic transaction is lower than the cost of making branch transaction. Mobile banking strengthen the relationship between the banks and the customers because it brings banking service directly to the people which eventually leads to customers loyalty.

### **2.9.2 Benefits for customers**

Mobile banking provides more benefits to its users been more secure means of accessing banking services compared to other forms of online banking (Herzberg 2003). These benefits are as follows:

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1. Mobile banking services could be used anywhere and it could be used without a desktop or PC and at a reduced price, this makes it convenient for users compared to the traditional banking method (ibid)
2. Mobile banking usually support time critical situation that requires prompt response from the customer due to its immediate feature (Kemper & wolf 2000).
3. Mobile banking provides self-service and digital access which is more cost effective (Ahonen 2002).

## **2.10 Critical success factor for M-banking**

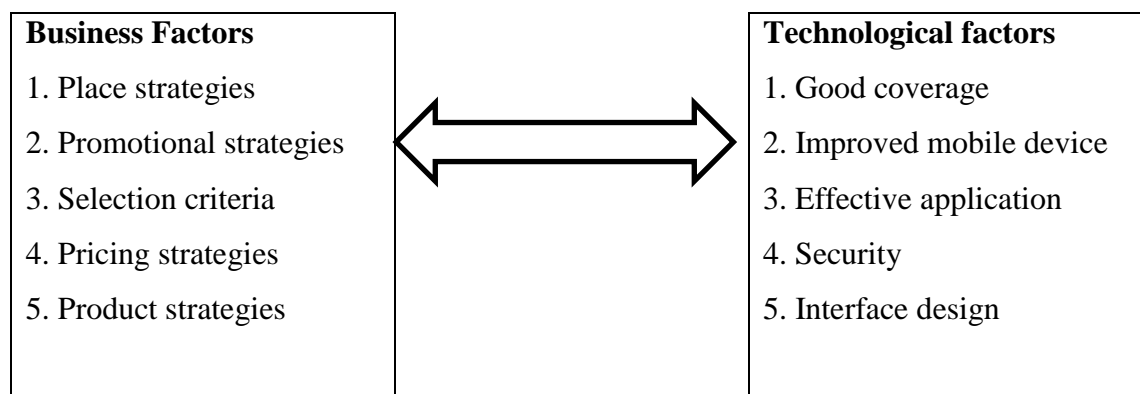
Critical success factor (CSF) has been defined in various ways, and this depends on the purpose for which they are been used for. If well understood, critical success factor (CSF) approach shows an accepted top-down methodology for corporate strategic planning in an organisation, and has it identifies key success factors, it can show the key relevant information that is required by top management (Rockart 1979). When the key success factors are identified and they are controllable, the management of an organisation should take the necessary step in ameliorate its potential for success (Chen, 1999).

Mobile banking has a lot of impact it can make on its provider (Banks).These are regarded as critical success factor and if well studied and implemented it can bring positive impact to the provider. There are several suggestions in the literature as to what constitute to the critical success factor of mobile commerce (inclusive of M-banking). According to the findings of Buellingen and Woerter (2002) from interview expert, they see data security, users- friendliness, personalization, and transmission rate as concern of people. And also the research survey carried in UK by Strong and Old (2000) it reveals that convenient and easiness to use internet facilities at any time and in any way is more paramount and will serve as a motivating factor to customers to use mobile .....

banking services. On the contrary, Green (2000) believes that user friendliness is a key factor for consumers and that; high complexity phones and the size of the screen can be a serious threat to the user.

It is also argued that psychological issues such as security and privacy can serve as a serious drawback when compared with technological issues which is believed to have a lesser impact. It is also argued from a different view, Shuster (2001 cited by Shaw 2006) believes that, pricing will be a crucial issue to customers and that price must be reasonably adjusted and affordable to subscribers of mobile users. Vrechopoulos et al (2002) has suggested a wider list in their critical success factors for mobile commerce framework. This is shown in the figure below.

**Figure 3.0: Critical success factors for m-commerce framework**



**Source: Adapted from Vrechopoulos et al. (2002)**

## **2.11 Mobile banking adoption**

Much research has focus on developed countries and, innovation and adoption have attracted so much attention in various literatures, and this has generated many models and theories which are believed to affect the adoption of an innovation. These theories have been used in many research and is been used in developed countries. Parts of the innovation studied are mobile banking, electronic banking, etc. (Mattila 2003; Gao & Owolabi 2008). Such studies are very few in developing countries such as Nigeria (Ezeoha 2005; Adesina et al 2010).

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### **2.11.1 Theories and model of innovation adoption**

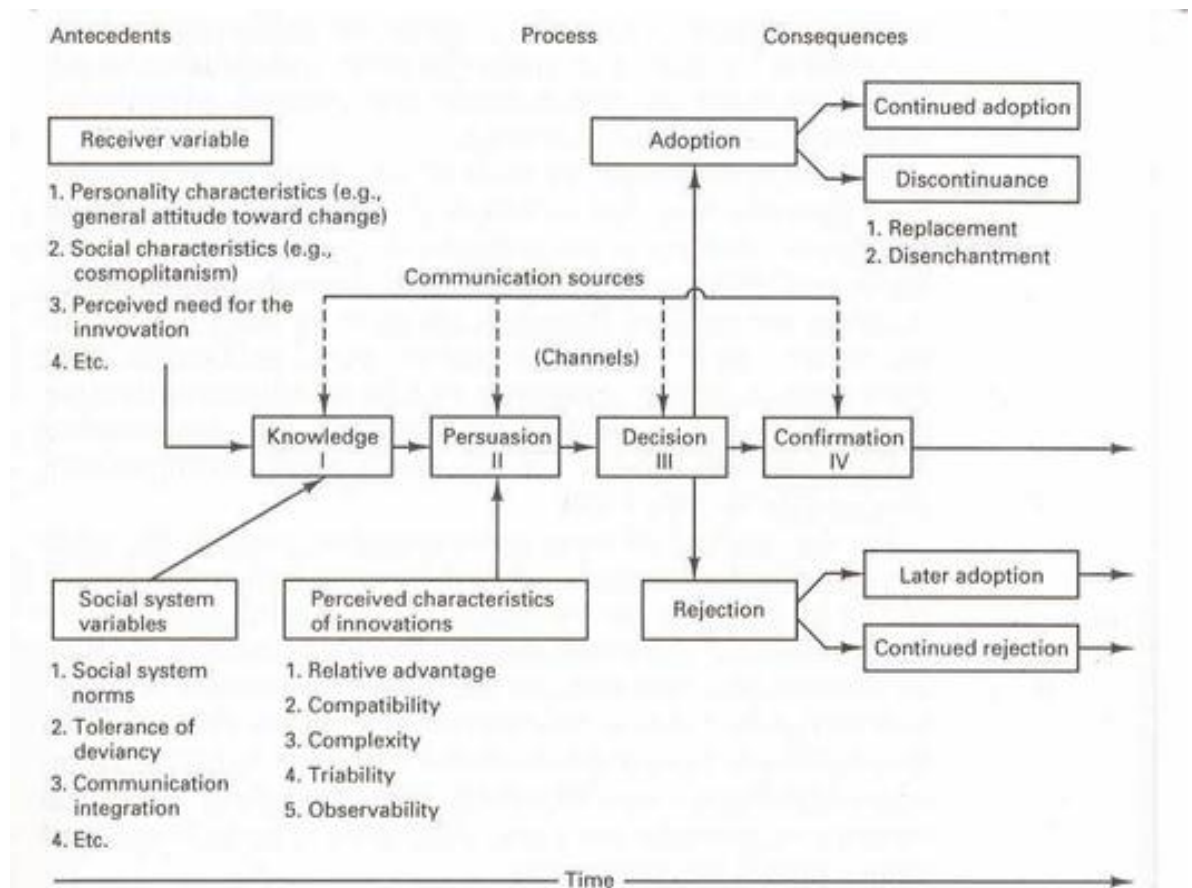
In regards to this present study, many theories have been developed to study the framework such as technology acceptance model (TAM), Innovation diffusion theory and theory of reasoned action (TRA). In one of the researches, Sathye (1999) adopted a model, which could be used to study internet banking adoption and awareness of service and benefit was perceived to an important factor in determining adoption. The original diffusion research was carried out in the early 1900's by a French sociologist Gabriel Tarde who brought about the original S-shaped of diffusion curve (University of Twente).

#### **1. Innovation Diffusion Theory**

According to Rogers (2003:5), he defines diffusion as the process of communicating an innovation through certain channels over a certain period of time among the group of a social system". He also defines the communication as a process where people create and share information among one another to reach a mutual understanding (Rogers, 1995). Rogers (1995) argued that, there are four stages in innovation diffusion process: invention, diffusion (or communication) through the social system, time and consequences. The easiness of use and newness (in terms of persuasion, knowledge and the decision to adopt) of an innovation can determine the way an individual will respond to an innovation. Some factors have been highlighted to be a determinant of adoption of an innovation and they are: complexity, relative advantage and compatibility. This is believed that, an innovation with relative advantage, with less complexity and compatible will be adopted easily and faster by an individual. According to Roger (2003) he believes that, relative advantage and compatibility are very important factors when discussing the issue of innovation adoption pattern and this believe is said to have lack concern for social economic consequences (Zhao 2008). Innovative model of diffusion is show in the figure below.

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**Figure 4.0: Innovation model of diffusion**



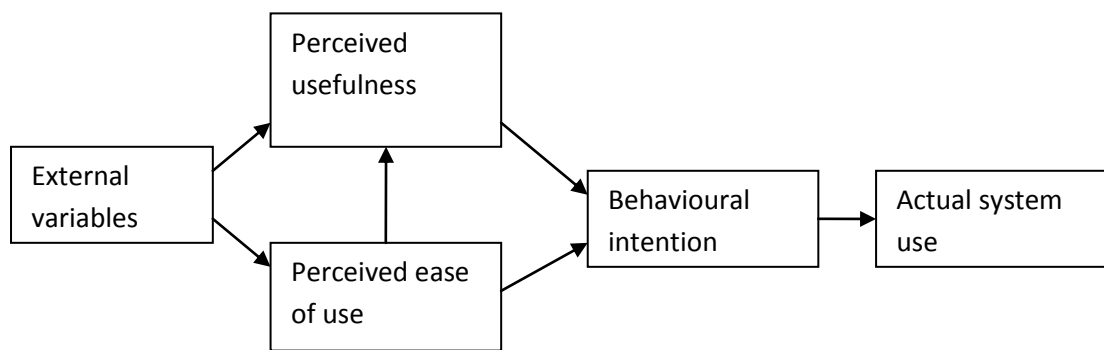
Source: Rogers (1995) Diffusion of innovation model.

## 2. Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was developed by Fred Davis in 1985 in his doctoral thesis at the MIT Sloan School of Management (Davis 1985). He suggested that users' motivation can be in three factors: perceived ease of use, perceived usefulness and attitude toward using the system (Davis 1985). Davis proposed that the readiness of a user to use or not to use a new technology or information system is determined by his or her attitude, and this attitude is influenced by two beliefs which are perceived usefulness and perceived ease of use. This model is the most widely used and widely accepted model among researchers due to its usefulness (Agarwal & Prasad 1999) and its usage has captured the attention of IS community (Mathieson et al 2001). Though the model has captured the attention of Information Systems community in .....

predicting user's acceptance of technologies (Chin & Todd 1995; Doll et al 1998) but it has its weaknesses and cannot be fully used to understand factors that affect users acceptance (Moon & Kim 2001). As a result of this many other models of extension have been suggested (Wang et al 2003; Luarn & Lin 2005). The perceived credibility, perceived financial cost and perceived self-efficacy has been adopted based on the literature, as an extension of Technological Acceptance Model (TAM) to investigate and understand the behavioural intention of users of mobile bankers (Luarn & Lin (2005). The theory of Technology Acceptance Model (TAM) is show in figure 7.0 below.

**Figure 5.0: The Technology Acceptance Model (TAM)**



**Source: Davis (1986, p. 24)**

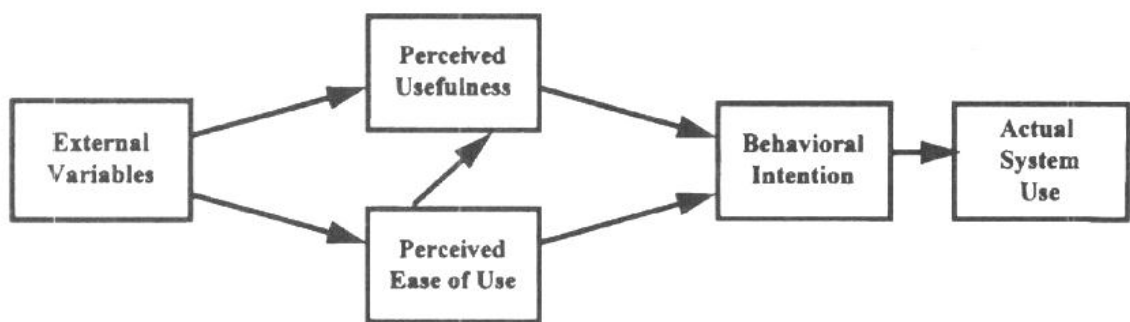
### 3. Theory of Reasoned Action (TRA)

The Theory of Reasoned Action (TRA) was developed in 1967 and was later revised and expanded in the middle 1970s by Ajzen and Fishbein. Fishbein and Ajzen proposed that, a person's actual behaviour can be determined by looking at his formal intention together with the beliefs that the person would have for the given behaviour (Davis, 1985). The intention that a person has before the actual behaviour is referred to the behavioural intention of a person and this could be defined as a measure of one's intention to perform the behaviour. Theory of Reasoned Action according to Fishbein and Ajzen, also suggest that, a person's behavioural intention could be determined by his attitude towards the actual behaviour together with the subjective norm that is

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associated with the behaviour (Ajzen & Fishbein 1980). The theories have been used to the study of human behavior and develop appropriate interventions in the 1980s. This theory is useful because it can explain and predict the behaviour and attitude of an individual yet a limited is that intention determinants are not usually limited to the proposal factor (Werner 2004). The Theory of Reasoned Action can be shown in the figure below.

**Figure 6.0: Theory of Reason Action Model**



**Source: Venkatesh & Davis, 1996, p. 453**

## **2.12 Previous research on mobile banking adoption**

Over the years, many researches have been developed to understand the factors influencing the consumer adoption of mobile banking. Many researchers have proposed a different model of user acceptance which are based on social psychology and anthropology theories (Aggelidis and Chatzoglou, 2008). Research conducted has been on the area of user acceptance of mobile technology applications but just few have been conducted on Nigeria.

### **2.12.1 Related Studies on e-commerce and banking in Nigeria**

Most of the research conducted has been in the area of e-commerce applications such as the following:

1. M-Commerce Implementation in Nigeria: Trends and Issues by Ayo et al. (2007).

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2. Electronic Payment Systems and Tele-banking Services in Nigeria by Agboola (2006).
3. The Adoption of Internet Banking in Nigeria: An Empirical Investigation by Chiemeké et al. (2006).
4. Adesina et al (2010) studied the level of acceptability of electronic banking in general in Nigeria and that found out that time saving, convenience, ease of use and compatibility with transaction needs are the factor responsible for the consumer adoption of users. Likewise security and privacy are also very important factors which is said to be hindering the adoption of mobile banking users.
5. The consumer adoption of internet banking users were carried out in Nigeria and they found out that, access to PC or computer and internet facilities, awareness, cost, availability of knowledge and support, convenience and privacy are the factors determining consumer adoption of internet banking as researched by Owolabi (2008).

### **2.12.2 Previous research conducted internationally on mobile banking adoption**

#### **1. Author: Mattila (2003)**

**Aim of Research:** The research was conducted in order to evaluate the factors influencing the adoption of mobile banking services in the innovation theory and, to also, formulate a model to describe the behaviour pattern of users.

**Research Findings:** In this research, it was found that access to internet facilities, perceived risk, compatibility issue, relative advantage, complexity, observability and interest to technological advancement all this affect the consumer adoption decision of mobile banking users according to Mattila (2003).

#### **2. Author: Laforet & Li (2005)**

**Aim of Research:** The research was carried out to examine the online mobile banking in China.



**Research Findings:** Base on this research it was established that lack of understanding and awareness of m-banking benefits are the main factors hindering the adoption of mobile banking usage in China though perceived risk, culture and technological skills are also barriers to online banking in China.

**3. Author: Medhi et al (2007)**

**Aim of Research:** This research looks at the factors which are responsible for mobile banking adoption and its usage across different countries by focusing on low income earners and the low literate. The research focused on non-bank model which uses the agents in its operation.

**Research Findings:** It was observed that variations along parameters such household type, services adopted, frequency of usage, ease of use and pace of uptake. Factors which are responsible includes pricing, trust, reliability on informal channels, transaction turnaround time, interface design (mobile phone), needs, agent proximity, pricing, and level of human intervention (agent's support).

**4. Author: Luarn & Lin (2005)**

**Aim of Research:** This research was carried out in order to understand user's behavioural intention to use mobile banking service based on the extension of technology acceptance model (TAM).

**Research Findings:** It was observed that the financial cost, perceived usefulness, self-efficacy, credibility and perceived ease of use were the factors influencing the behavioural intention to use mobile banking. In this finding, it was also observed that credibility was a major issue, which have a stronger influence on user's behavioural intention than the technology acceptance model (TAM) of perceived ease of use and perceived usefulness.

**5. Author: Amin et al (2006)**

**Aim of Research:** This research was carried out to analyse the adoption usage of mobile banking of the student willing to use mobile banking in the future.

**Research Findings:** It was observed that attitude and expectation were the factors which are useful to predict the wiliness of the under graduate student to adopt mobile banking in the future.

**6. Author: Young (2009)**

**Aim of Research:** This research was carried out in Taiwan. It looked into the factors responsible for the hindrance and the adoption of mobile banking facilities among university students in Taiwan.

**Research Findings:** It was able to conclude that, security and cost of connection to the internet was a hindrance to the adoption of mobile banking facilities among students in Taiwan.

**7. Author: Zhou et al (2010)**

**Aim of Research:** The researcher integrated the unified theory of use and acceptance of technology (UTAUT) and task technology fit (TTF) in explaining the adoption behaviour of mobile banking user.

**Research Findings:** From the investigation of the research, they found social influence, performance and task technology fit to be the factors which have a significant impact on the consumer adoption behaviour of mobile banking.

**8. Author: Riquelme & Rios (2010)**

**Aim of Research:** This research was carried out in Singapore to examine the factors which could influence the adoption of mobile banking usage among the current users of internet banking facilities considering gender as a supporting variable.

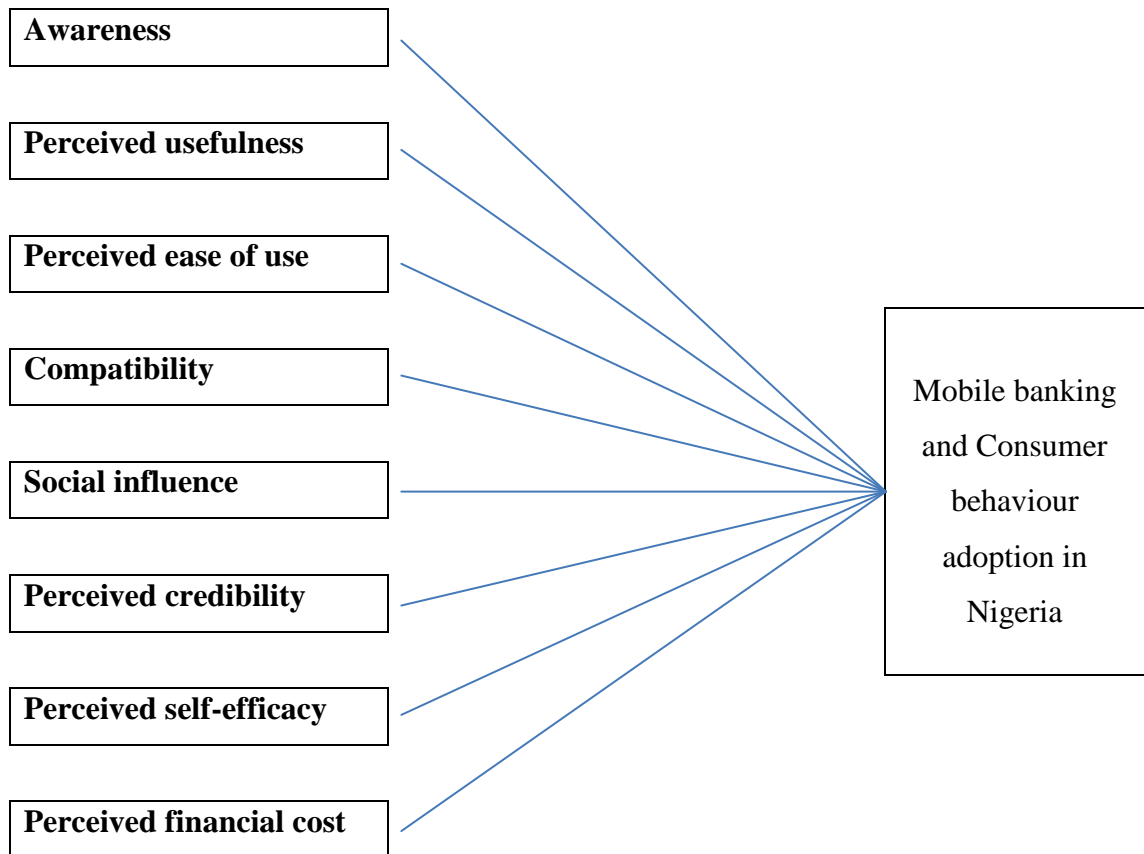
**Research Findings:** According to this research social risk, perceived usefulness and social influence are the most important factors that influence consumer intention to use

and adopt mobile banking facilities among male and the influence on each factors also differs among male users.

### **2.12.3 Theoretical framework for study**

Looking at the existing theories and ideas on the literature that have been examined, it is evidence that there are certain factors responsible for the adoption of mobile banking. These factors will be used to investigate the adoption of mobile banking behaviour of consumers in Nigeria. The research model is illustrated in fig 9. Base on the existing theories and ideas we will use it to formulate a comprehensive research framework which will be relevant to Nigeria as a developing country.

**Figure 7.0: Proposed Research Model**



**1. Awareness:** The level of information consumers have about mobile banking is one of the major factors impacting the adoption usage of online banking (Sathye 1999). The adoption rate of an innovation could be determined by level of awareness of the customers (Sathye 1999; Laforet & Li 2005). The use of mobile banking services is new to many customers and the banks need to create enough awareness to capture the attention of the customers.

**2. Perceived usefulness:** (Davis, 1985) defines Perceived usefulness as the degree to which an individual believes that using a particular system would enhance his or her job performance. Hence, it is believed that an innovation perceived to be useful is more likely to be adopted and customers will take advantage of the innovation such as mobile banking which they find useful to them (Luarn & Lin 2005). Perceived usefulness is one of the two most important factors affecting the acceptance of new technologies or information system.

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**3. Perceived ease of use:** (Davis, 1985) defines Perceived ease of use as the degree to which an individual believes that using a particular system or innovation would be free of physical and mental effort. It is believed that a customer will adopt an innovation or a particular system if it is easy to learn and use (ibid). An innovation perceived to be difficult to use by customers will be less adopted (Rogers, 1983:230). According to Cooper and Zmud (1997:137), ease of use of an innovation is one the most important characteristics for adoption of an innovation. Adoption of mobile banking is more likely to occur if the process of usage is easy for customers.

**4. Compatibility:** According to Hanudin (2007), perceived credibility is a determinant of behavioural intention to use an information system. It is believed that the adoption of mobile banking service would be made possible if it's compatible with the customers bank transaction needs (Mattila 2003). Compatibility of an innovation is more likely to be adopted, if it is compatible with job responsibilities, customer's needs and value system (Agarwal and Prasad, 1998:207).

**5. Social influence:** It is believed that the adoption of mobile banking facilities would be possible if individual behavioural intention of a customer is influenced by what people around believe about it (Ajzen 1991). Social influence such as the opinions of friends, parents, relatives is said to affect the customer's intention to adopt and use mobile facilities (Carlsson et al., 2006; Lopez-Nicolas et al., 2008; Hong et al., 2008 cited by Zhou et al. 2010).

**6. Perceived credibility:** The customer's intention to use an innovation or mobile device can be influenced by security and privacy (Luarn &Lin 2005). According to Hartman, et al. (2000:75) security is a major problem facing customers whenever they make online transaction. According to Cranor and Laurie (1999:2) in a similar study conducted on internet users it was found that 81% of users are concerned about privacy when they

are online. In a research by (Bestavros, 2000:55) found that consumers are always reluctant to share their information online due to fear that their financial life will be open to the internet universe. Gaining the confidence of customers is of paramount important to service providers and if not well managed could discourage users and could encourage negative spread of information which could pullback intending customers. User trust (privacy and security) are required by customers to ensure confidence in the mobile banking services provided by the operator (Gu et al., 2009; Li and Yeh, 2010).

**7: Perceived self-efficacy:** According to Bandura self-efficacy is defined as the judgments of how well one can execute courses of action which is required in deal with prospective situations (Bandura, 1982). It is believed that there exist positive relationship between technological experience and the effects which it has on computer usage (ibid).

**8. Perceived financial cost:** This believe shows that the cost of using mobile banking facilities could influence the intention to use mobile banking service (Luarn &Lin 2005; Mathieson et al 2001). Innovation is always associated with many costs such as operation cost, utilisation cost, investment cost, etc according to Rothwell and Gardiner (1984:88). The cost of using an innovation is very important especially when it comes to the use of mobile device in mobile banking and the price of using such technology should be affordable by the customers (Min et al., 2008). By lowering the cost of using an innovation such as mobile banking, customers who are price conscious will be more likely to adopt the innovation.

#### **2.12.4 Conclusion**

Mobile banking has been discussed in detail and is a subset of m-commerce (mobile-commerce). The key important factors have been discussed such as the modes of

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operation, the technology used in mobile banking services; mobile banking adoption in Nigeria, the critical success factor has also been looked into with the benefit of mobile banking to consumers and their provider. Equally, previous and existing theories of innovation of adoption have been presented which is used as a basis for our research framework.

# CHAPTER THREE

## RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter will outline the method used in answering the research questions. The research methods consist of techniques and procedures that were used to obtain and analyse relevant data from Nigeria bank customers (Saunders et al. 2009). Methodology is the overall approach which underpins the research process (Blaxter et al 2006). Research methodology can be defined as a method or way to systematically solve the research problem (ibid). The purpose of this is to understand and state the methods used for this research work in order to fulfil the research aim and objective.

### 3.2 Research type

Research type can be classified into two types and this could either be primary or secondary research depending on how the data collected was used (Various 2007). Secondary data collection has been the most common method of research and it involves the use of data which has already been collected for other purposes (Nargundkar 2008), while Primary research is the collection of data for the specific purpose of study which is from the original source and this can be directly from consumers (Various 2007). Primary data can be collected through survey (personal interview, telephone interview mailing of questionnaires and through schedules) or experiment (observation of quantitative measurement). Primary data is very important for the purpose of this research due to its relevance to this study and the richness of information that can be collected. Having realised that, there is limited research information that exists in the literature of Nigeria. Secondary data were also used in this research due to easy access to books, web site, materials from different libraries, related journals, etc. The data collected was used to review the innovation adoption theories

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and the data collected was used to analysis and answer the research question in order to achieve the research aim and objective. The secondary data serves as a help for the primary researches (Maria 2008). This research will use both secondary and primary data in achieving the purpose of this research.

### **3.3 Research Approach**

The most commonly used approach in research work is the quantitative and qualitative approach and inductive and deductive approach (Amaratunga et al. 2001). This will be discussed in detail.

#### **3.3.1 Qualitative and Quantitative Approach**

This qualitative and quantitative method was used for this research work. Qualitative approach is a participant observer research and this method involves getting information from respondents. This qualitative approach is not constrained by pre-determined categories of analysis (Patton 2002), as it gives room to explore the nature and origin of respondents view point with greater in-depth analysis (Patton 2002; Easterby-Smith et al. 2002). This method can provide timely and detailed information if it is carried out appropriately (Denzin & Lincoln 2003; Various 2007) because, it gives room for a thorough investigation of research to highly sensitive issues (Boxill et al.1997) though, this can be time consuming and costly to execute. To have a better understanding and detailed information about this research, qualitative approach was used because it allows respondents to give further explanation in regards to their answered question. Information that is more detail is usually gathered through people's experience, ideals and knowledge through this method (Alvesson & Deetz 2000 Patton 2002). While quantitative research method involves gathering information and data which is evaluated through a statistical analysis. This approach involves transforming perception into pre-structured, quantifiable categories (Alvesson & Deetz 2000). This

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approach uses questionnaire, statistics, observation, scale (Alvesson & Deetz 2000) and experiments (Ibid; Patton 2002). Quantitative research method gives clear presentation of finding and the result could be used for a larger population if it's well carried out. Quantitative research method has its own disadvantage, the finding of non-significance can be misconstrued to mean no relationship exist between variables and it could be as a result of inadequate statistical power and mathematical error as a result of wrong or poor calculation, therefore this could lead to misinformation (Haberfeld et al 2009). The differences characteristics of the two methods are shown below.

**Table 3.0: Characteristics of Quantitative and Qualitative**

| <b>Research aspect</b>        | <b>Quantitative research</b>   | <b>Qualitative research</b>  |
|-------------------------------|--|--|
| Approach to research enquiry  | Structured/rigid/predetermined methodology   | Unstructured/flexible/open methodology   |
| Main Purpose of investigation | To quantify extent of variation in a phenomenon, situation, issues, etc.   | To describe variation in a phenomenon. Situation, issues, etc.                                     |
| Sample size of population     | Greater emphasis on sample size  | Fewer cases  |
| Analysis of data              | Subjective variables to frequency distributions, cross-tabulations or other statistical procedures.                              | Subjective responses, narrative observational data to identification of themes and describes these |
| Communication of findings     | Organisation more analytical in nature, drawing inferences and conclusions, and testing magnitude and strength of a relationship | Organisation more descriptive and narrative in nature  |

**Source: (Kothari 2006) Research Methodology: Methods & Techniques.**

Considering the research aim for this study, the quantitative and qualitative approach was used through questionnaire distribution and interview by taken into consideration

the adopted research framework. Quantitative method was used to have a better and wider view of the situations in a fast and more economic manner (Easterby-Smith et al. 2002).

### **3.3.2 Deductive and Inductive Approach**

This research approach can be categorized into two, either deductive or inductive. Deductive approach is the testing of theories while inductive is building of theories (Perry 1998; Blaikie 2000; Gamage et al. 2008). When theories are formulated it is tested to prove or falsify hypothesis which is deduced from the relationship of variables of past formulated theories (Saunders et al. 2009; Gill & Johnson 2010). The hypothesis should be tested in order to check if the data of the hypothesis matches the hypothesis (Blaikie 2000). Inductive approach is building up of theories as a result of data analysis collected which could be obtained through observation of the empirical world (Saunders et al. 2009; Gill & Johnson 2010). The deductive approach was used in this research work because, the research sought to use existing theory which was adopted from the research framework to test the research hypothesis and, this is fast to carry out and is less risky (Saunders et al. 2009).

### **3.4 Research Instruments**

As early stated, the primary instrument used in this research study is questionnaire and interview. The questionnaire contains three sections. The appendix 1 & 2 began with the introduction statement written alongside the research questions which shows the aim and the importance of the research study, the attached letter give respondents the assurance of confidentiality of every information provided, also the time needed to complete the questionnaire was given. Section one contains the personal data which includes gender, age and occupation. The section two was to show the general understanding of the respondents towards mobile banking usage. Section three shows

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the questions that aim to identify the factors that affect/influence the consumer behaviour adoption of the respondents using both open and close ended questions. The questionnaires were designed to give respondents more opportunity for an in depth answers; which they feel had influence their decision either positively or negatively. The open-ended questions gave the respondents more opportunity to write what they think and how they feel about each question in regards to mobile banking services.

Equally, interview was also used in the research work. An interview could either be structured or unstructured. Structured interviews is a pre-planned discussion were questions are asked to get specific answers from respondents while unstructured interview is conducted by allowing respondents to bring up ideals which might lead to further probing (McNabb 2002). In order to improve the quality of the research work and for the researcher to have a better understanding of the subject matter, semi-structured telephone interview were conducted first which involved the e-banking officers. It contains a pre-determined open-ended question.

### **3.5 Pre-testing the questionnaire**

The questions were straight forward and easy to understand after a pre-test was carried out on seven individual. It was pre-tested to detect any error and for further improvement that is needed in the questionnaires' design (Willis 2005). It was also done to determine if the questionnaires were understandable and if the adopted survey procedure had worked (Crask, et al., 1995:210). The questionnaire shows some gaps such as ambiguity in the question, too many questions under each research framework, some questions were too long, etc., and adjustment was made on the research questions before it was finally distributed to the target audience. The final questionnaires were distributed through emails and some were taken to the banks and to government offices.

A copy of the semi-structured interview questions is contained in appendix 1 and a copy of the actual questionnaire is contained in appendix 2

### **3.6 Sample and Data collection**

The questionnaire was used as a survey instrument for the research work by collecting data from previous studies on mobile banking. Several questions were constructed based on the objective of the research work. Defining the target population is an important step in designing the research project (Crask, et al., 1995:176). A non-probability sampling techniques was used in this research work. The state capital was chosen and questionnaires were distributed to bank customers, workers and students in the state. The samples of respondents actually represent customers of various banks who are either users or non-users of mobile banking in Nigeria in order to ensure its suitability. A total of 270 respondents were considered out of 295 questionnaires that were sent out. The questionnaires consist of open ended and close ended questions and were used in order to have a proper understanding, accurate and genuine information of the subject matter and this can be found in appendix 2, the open-end questions will allow respondents to give their exact opinions (Russell & Jarvis 2008; Gratton & Jones 2004).

### **3.7 Data Collection Procedure**

#### **3.7.1 Electronic banking officers**

Three banks were taken into consideration in Nigeria, due to time constraint and cost, one of the states in the western part of Nigeria was considered, the largest state in terms of population and precisely the state capital was chosen. Interview was conducted with open ended questions which can be found in appendix 1. The three banks were chosen because they have a long history in Africa and they have one of the largest customer base in Africa and they were among the first to introduce mobile banking in Nigeria.

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The interview was conducted on the phone with the banking officers; this lasted for fifteen minutes. Some of the questions were specific and some were general information regarding mobile banking services in Nigeria. These gave the researcher a better understanding of the past and present challenges of the industry and how best in preparing the research questions.

### **3.7.2 Bank Customers**

In the state capital, one of the banks was chosen and official letter was written asking for their consent to distribute the questionnaires to the customers of their bank, this was approved without any hesitation. Questionnaires were sent to a friend through email and were printed out and distributed to respondents within targeted groups. Due to time constraint and cost one of the banks within the state capital was chosen. The respondent includes any respondent who is a bank customer. Choosing one bank is because, majority of banks customers in Nigeria maintain account with two or more banks. So therefore, the need to use many banks may not be necessary and also the limited time frame to complete this research work was short. Questionnaires were also distributed to students through email, business people and office workers in one of the local government office. It was easier to retrieve data from the students because of the internet facilities while the government workers were handed over questionnaires which was filled and then taken back immediately. Several questions were constructed based on the objectives of the research work.

### **3.8 Methodological limitations**

There were several challenges that came up during this research work in regards to the chosen approach, they are highlighted below.

**Sample size:** The sample size is considered not to be too large which could affect the extent to which the findings may be generalised for the whole country.

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**Time and cost:** The time required to complete the research was very small and this has influence the researcher decision to pick a small sample size. The short time did not permit an in-depth search for more information. There were cost associated with the research work which involves telephone calls and transportation.

**Political unrest:** As at the time this research was going on there was a general strike in the country over fuel crises and it resulted in the delay of getting back responses in time.

### **3.9 Data analysis and interpretation**

The data taken from the respondents was properly checked and inputted into the Statistical Package Social Science (SPSS) software which was used to analysis the responses from the collected data. This allowed the frequency and percentage distribution to be developed from the analysis of data collected. The frequency and percentage distribution was used to calculate the personal data information of respondents, familiarity with mobile usage and the relationship between the factors influencing consumer behaviour of mobile banking in Nigeria. The research framework has been used to predict the research hypothesis and these are highlighted below.

### **3.10 Research model and hypotheses**

1. The use of mobile banking is just developing and to many people, it's a new experience which they are yet to familiarise themselves with. A research carried out in Australian shows that the majority of consumers were not aware of the facts about online banking and this has a major impact on the adoption rate. It is therefore necessary for any bank offering this service to make sure that customers are aware of this service and how it can add value to their life adequate information should be given.

**Hence, we posit that:**

**H1:** Awareness about mobile banking has a positive effect on consumer intention to adopt and use mobile banking.

2. Perceived usefulness and perceived ease are the two components of Technology Acceptance Model (TAM). According to (Davis 1989), they are very important factors affecting the adoption of new innovation. There exist a positive relationship between Perceived usefulness and perceived ease of use and they are very important factors on the use of electronic banking (Poon 2008). Therefore, an innovation perceived to be useful to customers which is equally easy to use is more likely to be better accepted by consumers. By applying these into mobile banking context **we hypothesize:**

**H2:** Perceived usefulness has positive influence on consumer intention to adopt and use mobile banking.

**H3:** Perceived ease of use has a positive effect on consumer intention to adopt and use mobile banking.

3. The compatibility of an innovation with an individual's transaction needs it very important. If an innovation is not compatible with consumers needs the consumer will not adopt such innovation no matter how useful that innovation is.

**Hence, we posit that:**

**H4:** Compatibility has a positive effect on consumer intention to adopt and use mobile banking.

4. According to Ajzen (1985) subjective norm can be defined as the perceived social influence to engage in an activity or not to engage in a certain behavior. Social factors such as relatives, families, parents, friends and bosses will affect consumer's intention to adopt and use mobile banking services (Carlsson et al., 2006; Lopez-Nicolas et al., 2008; Hong et al., 2008 cited by Zhou et al. 2010).



**Therefore, we hypothesize:**

**H5:** Social influence has a positive effect on consumer intention to adopt and use mobile banking.

5. Polatoglu and Ekin (2001) found out that perceived risk (security and privacy) was one of the major factors affecting users of mobile banking, and also customer satisfaction of mobile banking services. Where there is uncertainty perceived risk usually comes into play.

**Hence we hypothesize:**

**H6:** Perceived risk has a negative impact on consumer intention to adopt and use mobile banking.

6. According to Bandura, self-efficacy is defined as the judgments of how well one can execute courses of action that is required to deal with prospective situations (Bandura, 1982). It is believed that there exist positive relationship between technological experience and the effects which it has on computer usage (ibid).

**We therefore hypothesize:**

**H7:** Perceived self-efficacy has a positive influence on consumer intention to adopt and use mobile banking.

7. It is believed that the cost of using mobile banking facilities could influence the intention to use mobile banking service (Luarn &Lin 2005; Mathieson et al 2001). Where the costs are low, it will encourage greater usage of the service (Min et al., 2008) and when it's high it will discourage the use of mobile banking service.

**We therefore hypothesize:**

**H8:** Perceived financial cost has a negative influence on consumer intention to adopt and use mobile banking.

### **3.11 Conclusion**

The methodology for this research work has been looked into after taken into consideration the characteristics of both quantitative and qualitative approach that was used. The questionnaires were both quantitative and qualitative in nature for the gathering of necessary data useful for the research work and also semi structured interview was taken into consideration. The limitation of the research work was mentioned. In addition to this, method of data analysis and interpretation was given with the research model and hypotheses developed from the research frame work. The next chapter shows the detailed data analysis and interpretation.

# CHAPTER FOUR

## DATA ANALYSIS AND RESULTS

### 4.1 Introduction

This chapter will analysis the result obtained from the questionnaires that was distributed to respondents using the research framework and also the telephone interview conducted with the members of the electronic banking officers in studying consumer adoption of mobile banking in Nigeria. It will also look at the level of consumer knowledge of mobile banking in Nigeria with the current adoption rate.

### 4.2 Findings from e-banking officers

Electronic-banking (e-banking) officers are those people in charge of managing and promoting electronic banking products or services and this includes mobile banking being offered by banks. From the interview conducted with the members of the e-banking officers, it shows that as long as an individual is a customer of the bank and has provided a phone number he or she qualifies to use the facilities and also the kind of mobile phone used by customers determines the kind of mobile service the customer receive. The customer can either operate savings or current account or both.

The finding from the banking officers also shows that, more people uses the SMS alert to receive notification when transaction is made on the account either payment or withdrawer. The SMS uses syntaxes such as texting BAL 331 for SMS messages while the application download requires individual to have a mobile device (GPRS) which allow downloading of applications into the mobile phone. The question regarding how awareness is being created, the banking officer said they use advert because it can reach a larger population in time. One officer in one banks said they make regular advert through various media such as TV which demonstrate and illustrate the usefulness of

such facility, another officer said apart from using the advert their marketing officer also help to convey the message to customers of the banks which to build more confidence in the mind of the customers.

Question regarding the adoption rate and customer’s attitude was also answered. One of the officers of the banks believes that, it’s more than the awareness creation and that, there are other factors holding the customer back from not taking or using the innovation. Having increase the level of awareness and which is constant, there are still high numbers of people coming to the bank to check account balance, make payment into a separate account which could have been easily transferred through the use of the mobile device has shown that awareness is not just enough. The banking officer highlighted cost, security and privacy has some of the major challenges been faced.

### **4.3 Respondents Demographic Characteristics**

The frequencies were used to determine how often respondents made a certain response in answering questions, and this allow general information about the information collected to be analysed. Questionnaires were also distributed to bank customers in Nigeria. The demographic detail shows gender, age, occupation and these are shown in the table below. Secondly, the mobile banking usage of respondents was also discussed.

#### **4.3.1 Gender**

Table 4.0 below shows the gender of respondents in number and in percentage terms.

**Table 4.0: Gender of respondents**

|            | <b>Frequency</b> | <b>Percent</b> | <b>Cumulative Percent</b> |
|------------|------------------|----------------|---------------------------|
| Valid Male | 153              | 56.7           | 56.7                      |
| Female     | 117              | 43.3           | 100.0                     |
| Total      | 270              | 100.0          |                           |

As reflected in the table above, 56.7 percent (153) of the entire respondents were male and 43.3 percent (117) were female. This indicates that there are more male respondents than female.

Table 4.1 and 4.2 below reflects user and non-user gender distribution. In table 4.1, it shows that 62% (60) of users are male and 38% (36) are female, this result shows that male use mobile banking service than the female. The majority of users being male is also consistent with the finding of Singh's (2004) on the adoption of internet banking in South Africa. In table 4.2 shows that the numbers of both male and female of non-users surpass the numbers of users (male &female). This shows that there are few users 35.56% (96) of mobile banking compare to the high numbers of non-users 64.44% (174).

**Table 4.1: Mobile banking users' gender distribution**

| <b>Gender</b> | <b>Users</b>       | <b>Percentage</b> |
|---------------|--------------------|-------------------|
| Male          | 60                 | 62%               |
| Female        | 36                 | 38%               |
| <b>Total</b>  | <b>96 (35.56%)</b> | <b>100%</b>       |

**Table 4.2: Mobile banking non-users' gender distribution**

| <b>Gender</b> | <b>Non-users</b>    | <b>Percentage</b> |
|---------------|---------------------|-------------------|
| Male          | 93                  | 53%               |
| Female        | 81                  | 47%               |
| <b>Total</b>  | <b>174 (64.44%)</b> | <b>100%</b>       |

### **4.3.2 Age**

Table 4.3 below; reflect the age groups that participants falls into. 2.22% (6) is the lowest age group which is below 20 while the majority of the respondents 36.67% (99) are between ages of 21-30, with 30 % (81) in the age group of 31 to 40, 24.44 % (66) in the age of 41 to 50 and only 6.67% (18) in the over 51 age group. The study shows that, respondents between the ages of 21-30 are in the dominant group.

**Table 4.3 Age of respondents**

| Age          | Frequency  | Percentage |
|--------------|------------|------------|
| Below 20     | 6          | 2.22       |
| 21-30        | 99         | 36.67      |
| 31-40        | 81         | 30         |
| 41-50        | 66         | 24.44      |
| 51-Above     | 18         | 6.67       |
| <b>Total</b> | <b>270</b> | <b>100</b> |

Table 4.4 and 4.5 shows the age distribution of mobile banking users and non-users. This is followed by age 31-40 (27), 41-50 (12) and 51-above (6) respectively. While the non-users between the ages of 31-4 (54), 41-50 (54) have the highest number of non-users. This shows that quite a lot of people are yet to embrace the innovation.

**Table 4.4 Mobile banking users' age distribution**

| Age          | Users              |
|--------------|--------------------|
| Below 20     | 0                  |
| 21-30        | 51                 |
| 31-40        | 27                 |
| 41-50        | 12                 |
| 51-Above     | 6                  |
| <b>Total</b> | <b>96 (35.56%)</b> |

**Table 4.5 Mobile banking non-users' age distribution**

| Age          | Non-users           |
|--------------|---------------------|
| Below 20     | 6                   |
| 21-30        | 48                  |
| 31-40        | 54                  |
| 41-50        | 54                  |
| 51-Above     | 12                  |
| <b>Total</b> | <b>174 (64.44%)</b> |

### 4.3.3 Occupation

The occupation distribution of the participants defers from one another. Table 4.6 reflect that the highest respondent is the office worker with 73.33% (198) respondents followed by the students with 15.56% (42) of respondents, 11.11% (30) are office worker and other is 0%.

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**Table 4.6 Occupation**

| Occupation      | Frequency  | Percentage |
|-----------------|------------|------------|
| Student         | 42         | 15.56      |
| Office worker   | 198        | 73.33      |
| Business person | 30         | 11.11      |
| Others          | 0          | 0          |
| <b>Total</b>    | <b>270</b> | <b>100</b> |

**Table 4.7: Mobile banking users' occupation distribution**

| Occupation      | Users             | Percentage  |
|-----------------|-------------------|-------------|
| Student         | 18                | 18.75       |
| Office worker   | 66                | 68.75       |
| Business person | 12                | 12.5        |
| Others          | 0                 | 0           |
| <b>Total</b>    | <b>96 (35.6%)</b> | <b>100%</b> |

**Table 4.8 Mobile banking non-users' occupation distribution**

| Occupation      | Non-users         | Percentage  |
|-----------------|-------------------|-------------|
| Student         | 24                | 14          |
| Office worker   | 132               | 76          |
| Business person | 18                | 10          |
| Others          | 0                 | 0           |
| <b>Total</b>    | <b>174 (64.4)</b> | <b>100%</b> |

Table 4.7 and 4.8 depicts the occupation distribution of the two different groups. As showed in table 4.7, the users 35.6% (96) are less than the non-users with 64.4% (174). The majority of the respondents were the office workers 73.33% (198) compare to other group in the category. The numbers of office worker who are users 68.75% (66) is low when compared to the numbers of office worker who are non-users 75.86% (132). The students have a very few respondents when compared to the office workers in the group. The numbers of respondents of students who are users 18.75% (18) are less than the numbers of non-users 14% (24). The study shows that students constituted more respondents after office worker though this is very low. The evidence shows that much attention has not been given to educational institutions. Students have not been targeted

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in particular. There are opportunities of having an improved numbers of students as predicted by Amin et al (2006). The business persons both users and non-users 11.11% (30) show low indication of respondents and its evidence that, their flexible schedule and other factors might be responsible for this category of people not showing much interest. The numbers of business person who are users 12.5% (12) are lower than the numbers of non-users (18).

#### **4.4 Level of consumer knowledge about M-banking, and in comparison with current adoption rate**

As shown in table 4.9 below, majority of the consumers 94.44 % (255) have heard of mobile banking facility and as well as the benefits they could derive from using this innovation. The banks have used different means of advertisement such as radio, bill boards, newspapers and even TV in conveying their messages to their customers but it is rather unfortunately that innovation is yet to be well embraced by bank customers. With the high rate of consumer knowledge about mobile banking in Nigeria, this probably shows that banks are making possible effort to inform their customers about mobile banking service. Though a lot of people claim to have heard of mobile banking services but when compared to the rate of adoption of current users of the services this is rather very low. And this is similar to the finding of Gao and Owolabi (2008) in their research on internet banking in Nigeria. This shows that, consumer's attitude towards mobile banking in Nigeria is low with the way the innovation is embrace.



**Table 4.9: Consumers knowledge and usage of mobile banking**

| <b>Consumers knowledge and usage of mobile banking</b> | <b>Frequency</b> | <b>Percentage</b> |
|--|------------------|-------------------|
| Have you heard of mobile banking before?               |                  |                   |
| Yes  | 255              | 94.44             |
| No   | 15               | 5.56              |
| <b>Total</b>   | <b>270</b>       | <b>100.0</b>      |
| Do you own a mobile phone?                             |                  |                   |
| Yes  | 270              | 100               |
| No   | 0                | 0                 |
| <b>Total</b>   | <b>270</b>       | <b>100</b>        |
| Do you use mobile banking services?                    |                  |                   |
| Yes  | 96               | 35.56             |
| No   | 174              | 64.44             |
| <b>Total</b>   | <b>270</b>       | <b>100.0</b>      |

From this research it shows that the rate of mobile banking adoption in Nigeria is low and this is consistent with the findings of Adesina et al. (2010) based on the level of e-banking acceptance of customers in Nigeria. In their research they found that, mobile banking is the least embrace or adopted by customers. Their findings and knowledge has given a better understanding and contributed to e-banking in Nigeria, and it gave more understanding and ability to assess the proposed research framework which influence consumers to adopt and which is also likely to influence the decisions of the non-users.

#### **4.5 Factors influencing consumer adoption of mobile banking in Nigeria**

This study has proposed a research framework developed from previous findings which will be used to analyse the data. The factors influencing consumer adopting of mobile banking in Nigeria will be analysed using the research framework using the sample that was selected.

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### 4.5.1 Awareness

**H1:** Awareness about mobile banking has a positive effect on consumer intention to adopt and use mobile banking.

**Question (Users):** Has awareness helped you to start using mobile banking service? Please give reasons (if any).

**Question (Non-users):** Will the awareness of mobile banking help convince you to start using the service? Please give reason (if any).

**Table 4.10: Awareness (users)**

|           | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| Valid Yes | 75        | 78.1    | 78.1               |
| No        | 21        | 21.9    | 100.0              |
| Total     | 96        | 100.0   |                    |

**Table 4.11: Awareness (non-users)**

|           | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| Valid Yes | 114       | 65.5    | 65.5               |
| No        | 60        | 34.5    | 100.0              |
| Total     | 174       | 100.0   |                    |

Looking at the level of consumer knowledge about mobile banking in Nigeria from the investigation conducted it shows that, the level of consumer knowledge is high. From table 4.10 above, it shows that the majority of the current users 78.1% acknowledged that awareness about mobile banking services contributed to their decision to use the service while 65.5% of non-users believe that awareness about mobile banking services will help convinced them to start using the service. In regards to the above question, a respondent (user) said:

*“The awareness of this service has helped me to know the benefits which heard led to the usage”.*

Equally, majority of the non-users (65.5%) who have heard about the self-service believes that awareness is likely to encourage them to start using mobile banking service. A respondent (non-user) said:

*“I have heard about mobile banking through a family friend but my bank is yet to inform me about the service but I believe when it’s available from my bank I will start using it”.*

Another respondent (non-user) also said *“Awareness about the mobile banking is good but my bank is yet to inform me personally though, I have seen the advert on TV but I did not get the message properly and if my bank could educate me, I will know the cost involve and the benefit”.*

Among the non-user few confirmed that the lack of awareness is their main reason for not using mobile banking service and this is similar to the findings of Laforet and Li (2005) in their study of mobile banking adoption in China that lack of awareness is a problem in the country. This is also similar to the findings in Australia that consumers are not aware about the possibilities, advantages/disadvantages involved with online banking. Gao and Owolabi (2008) found the level of awareness to be an important factor in encouraging consumers to adopt related self service facility (internet banking) in Nigeria.

This is therefore, in support of the hypothesis that awareness about mobile banking has a positive effect on consumer intention to adopt and use mobile banking. This research finding shows that awareness is very important and if customers are well informed about the advantages/disadvantage and the benefits involved in general, it will be embraced. This shows that awareness have a positively influence on consumers intention to adopt and use mobile banking service.

## 4.5.2 Perceived usefulness

**H2:** Perceived usefulness has positive influence on consumer intention to adopt and use mobile banking.

**Question (Users):** Did you consider the usefulness of mobile banking before applying for mobile banking services? Please give reasons (if any).

**Question (Non-users):** Will the usefulness of mobile banking services help your decision to use the service? Please give reason (if any).

**Table 4.12: Perceived usefulness (users)**

|       |       | Frequency | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------------|--------------------|
| Valid | Yes   | 87        | 90.6          | 90.6               |
|       | No    | 9         | 9.4           | 100.0              |
|       | Total | 96        | 100.0         |                    |

**Table 4.13: Perceived usefulness (non-users)**

|       |       | Frequency | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------------|--------------------|
| Valid | Yes   | 123       | 70.7          | 70.7               |
|       | No    | 51        | 29.3          | 100.0              |
|       | Total | 174       | 100.0         |                    |

Table 4.12 and 4.13 above shows the users and non-users. As a result of the awareness received by the customers, majority of the users 90.65% confirm that, the usefulness of mobile banking service is very important to their decision to use the service while the non-users 70.7% said, the usefulness of the self-service will influence their decision to use it.

A respondent (user) said *“I believe it is convenient and it saves time, these are the reasons I decided to use mobile banking service and it has been very useful since I started using it”*.

Another respondent (user) also said *“Since am a very busy man and my work does not permit regular visit to the bank, so I thought, it will be very much useful for me and that’s the main reason I started using it”*.

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Majority of the non-users 70.7% believes that its usefulness must be realized for them to use mobile banking service.

A respondent (non-user) said *“at times when you are busy or tired I believe you can use your mobile phone to do the transaction so I believe it can ease banking transaction”*.

Another respondent (non-user) said *“well I have not decided yet because there can be fraud with the service, although I know it can be useful but my concern is the issue of fraud”*.

This respondent is sceptical about the reliability of the usefulness of mobile banking service having considered the issue of security. This research finding is also consistent with that of Mattila (2003), and Luarn and Lin (2005) that the issue of security still have an impact on the perceived usefulness. Nevertheless, looking at the percentage of the users 90.6% and the non-users 70.7%, this clearly shows that usefulness has a positive impact on consumer intention to adopt and use mobile banking.

So therefore, perceived usefulness has a positive effect on consumer intention to adopt and use mobile banking.

### **4.5.3 Perceived ease of use**

**H3:** Perceived ease of use has positive effect on consumer intention to adopt and use mobile banking.

**Question (Users):** Did you consider the simplicity of mobile banking services before applying for it? If (yes) has it been easy to use. Please give reasons (if any)

**Question (Non-users):** Will you consider mobile banking facilities if it was simple to use on your mobile device? Please give reason (if any).

**Table 4.14: Perceived ease of use (users)**

|       |       | Frequency | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------------|--------------------|
| Valid | Yes   | 81        | 84.4          | 84.4               |
|       | No    | 15        | 15.6          | 100.0              |
|       | Total | 96        | 100.0         |                    |

**Table 4.15: Perceived ease of use (non-users)**

|       |       | Frequency | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------------|--------------------|
| Valid | Yes   | 126       | 72.4          | 72.4               |
|       | No    | 48        | 27.6          | 100.0              |
|       | Total | 174       | 100.0         |                    |

From table 4.14 and 4.15 above, it shows that the majority of the users 84.4% and non-users 72.4% confirmed that ease of use is important for their decision to adopt mobile banking service. The current users 84.4% acknowledged that, their perception about the ease of use of this device helped their decision to use this service having been inform about its advantages and disadvantage while 72.4 said they will consider its usage if it is simple to use on their mobile device.

A respondent (user) said *“It is easy to use since I have started using it because it has an appealing user interface just like the smart phone”*.

One of the respondents (user) said *“I have seen it several times with my colleagues and the way transaction was carried out on it, and when I realised it was not hard to use I applied for it”*.

One of the female respondent said *“I saw my neighbours daughter using it and found out that it was not hard to use after she took me through the process”*.

Another respondent (non-user) said *“I think it should be easy to use since it’s on my mobile phone and as long as I’m able to use my mobile phone it should not be difficult to use”*.

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Another respondent (non-user) said “*as long as it does not require so many details I believe, I should be able to use it*”.

This research work is consistent with Luarn and Lin’s (2005) finding on behavioural intention to use mobile banking and also with the findings of Adesina et al. (2010) on electronic banking in Nigeria. This shows that, when an innovation is easy to use consumers will adopt it. This finding therefore shows that, perceived ease of use has a positive effect on consumer intention to adopt and use mobile banking and so therefore, the hypothesis is accepted.

#### 4.5.4 Compatibility

**H4:** Compatibility has a positive effect on consumer intention to adopt and use mobile banking

**Question (Users):** Did you consider if mobile banking services would meet your important transaction needs before applying for it? Please give reasons (if any)

**Question (Non-user):** Would you have considered mobile banking services if it was going to meet your important transaction needs? Please give reason (if any).

**Table 4.16: Compatibility (users)**

|           | Frequency | Valid Percent | Cumulative Percent |
|-----------|-----------|---------------|--------------------|
| Valid Yes | 90        | 93.8          | 93.8               |
| No        | 6         | 6.2           | 100.0              |
| Total     | 96        | 100.0         |                    |

**Table 4.17: Compatibility (non-users)**

|           | Frequency | Valid Percent | Cumulative Percent |
|-----------|-----------|---------------|--------------------|
| Valid Yes | 129       | 74.1          | 74.1               |
| No        | 45        | 25.9          | 100.0              |
| Total     | 174       | 100.0         |                    |

Table 4.16 and 4.17 above shows the majority of the respondent’s users 93.8% and non-users 74.1% who believes that, the services provided through their banks using a mobile

device must be compatible with their important transaction needs before they can use the self-service. This is therefore saying that, when an innovation is not compatible with an individual's need then, there might be no need to use the it. The users 93.8% acknowledge that, the service been compatible with their important transaction need was put into consideration having been informed about its usefulness.

One of the respondents (user) said *"I considered its usefulness and how convenient it was going to be and equally, looking my schedule I realise it was going to be compatible with my business needs"*.

Among the respondent (non-user) said *"I would have love to use it if there will not be any further need of going to the bank for any other transaction because it can only meet some of my needs and not everything. I will still have to use the ATM machine and also make a deposit into my account"*. This shows that some bank customers will still not use the service due to some other factors.

Majority of the current users have considered using mobile banking service because it was compatible with their important transaction needs from the perspective of its usefulness. This is also similar to the findings of Yang (2009), Luarn and Lin (2009) in their research which shows that compatibility with important transaction needs leads to the thought of usefulness.

Therefore, this hypothesis is supported that compatibility has a positive effect on consumer intention to adopt and use mobile banking.

#### **4.5.5 Social influence**

**H5:** Social influence has a positive effect on consumer intention to adopt and use mobile banking.

**Question (users):** Did your friend(s), parent(s), family (ies) or colleague(s) influence your decision to adopt mobile banking services?



**Question (Non-users):** Will you be influenced to use mobile banking facilities if people in your network such as friends, parents, families or colleagues use it? Please give reason (if any).

**Table 4.18: Social influence (users)**

|           | Frequency | Valid Percent | Cumulative Percent |
|-----------|-----------|---------------|--------------------|
| Valid Yes | 54        | 56.2          | 56.2               |
| No        | 42        | 43.8          | 100.0              |
| Total     | 96        | 100.0         |                    |

**Table 4.19: Social influence (non-users)**

|           | Frequency | Valid Percent | Cumulative Percent |
|-----------|-----------|---------------|--------------------|
| Valid Yes | 117       | 67.2          | 67.2               |
| No        | 57        | 32.8          | 100.0              |
| Total     | 174       | 100.0         |                    |

Table 4.18 and 4.19 shows the users 56.2% and non-users 67.2% of the entire respondents who considered the importance of social influence. The impact of social influence is not very high among users (56.2%) nevertheless, it still has an impact on the users who were either influenced by friends, relatives or parents. 43.8% were not influence by people they know.

One respondent (user) said *“my friends convinced me about mobile banking and after considering other factors such as its usefulness and convenience, I decided to apply for the service”*. This shows that social influence has an effect on consumer adoption of mobile banking.

The non-users 67.2% said, they could be influence by friends, relatives or parents to use the service. Seeing people they know might help reduce their fear and increase their confidence level.

Among the non-user (32.8%) who said (NO) believes that, *“people can’t influence me at all and what if the opinions of my friends or families are wrong”*.

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A non-user (67.2%) who is among the respondents who said (YES) believes that “*until people I know very well start using mobile banking service, it is then, I will start using it*”.

This finding shows that consumers can be influenced by people they know after finding out the benefits they could derive from using the service. This research is consistent with the findings of Zhou et al (2010) and Riquelme and Rios (2010) that, social influence has a significant effect on consumer adoption of mobile banking.

Therefore, the hypothesis is supported that social influence has a positive effects on consumer intention to adopt and use mobile banking.

#### 4.5.6 Perceived credibility

**H6:** Credibility has a negative impact on consumer intention to adopt and use mobile banking.

**Question (Users):** Did you see security and privacy as an issue before applying to use mobile banking services? Please give reasons (if any).

**Question (Non-user):** Do you see security as an issue for not using mobile banking services? Please give reason (if any)? Please, give reason (if any).

**Table 4.20: Perceived credibility (users)**

|           | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| Valid Yes | 54        | 56.2    | 56.2               |
| No        | 42        | 43.8    | 100.0              |
| Total     | 96        | 100.0   |                    |

**Table 4.21: Perceived credibility (non-users)**

|           | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| Valid Yes | 162       | 93.1    | 93.1               |
| No        | 12        | 6.9     | 100.0              |
| Total     | 174       | 100.0   |                    |

Table 4.20 and 4.21 shows the entire users and non-users of respondents. From the research question above it shows that, 56.2% of users confirmed that, they see security and privacy as an issue before applying to use mobile banking service while 43.8% did not see security and privacy as an issue before applying to use the service.

One respondent (user) said *“though I was somehow afraid of using the service but my confidence grew as I started using the service and I have not experience any difficulties since I have started using the service”*.

Another respondent (user) said *“I believe mobile banking should be safe if the account password is not compromised”*.

Equally, one of the users said *“I did not see security and privacy as an issue because in my bank there are series of controls and check put in place to ensure customers are aware of the transaction, for instance, request coming from your registered mobile number, separate pins (ordinary pin and transfer pin), confirmation of initiation of the transaction, and real time alert on either failure or success of the transaction”*.

This research is consistent with the findings of Adesina et al. (2010) and Yang (2009) but different from the findings of Gao and Owolabi (2008) as they could not establish the relevance of security issue with the adoption of internet banking in Nigeria. Nigerians are generally less risk-averse according to Gao and Owolabi (2008) in their research findings and looking at the current users who went ahead to take up the mobile banking this shows that some customers are will to take the risk due to the benefits they could get from mobile banking. Nevertheless, this still shows that, majority of customers are still afraid of the innovation.

According to Polatoglu and Ekin (2001), it was found that perceived risk and customer satisfaction were the main factors affecting consumer adoption of mobile banking service. Perceived risk usually arises from uncertainty. Most of the non-users 93.1%

confirmed that security and privacy was as an issue for not applying to use mobile banking services while 6.9% did not see it as an issue for not using the service?

A respondent (non-user) said *“to be honest with you I’m worried about security and privacy of my account and is the main reason I have not decided to embrace mobile banking facilities, and for me, this is the most important factor among many others”*.

This shows that a lot of customers (non-users 93.1%) intent to use the service but for fear of account fraud and uncertainty that may occur has made customers not to embrace the innovation. Security of account is the priority of the majority of non-users. Over the years, Nigeria have heard many issues relating to ATM fraud, were money have been withdrawn from customers account without their consent. There have been so many cases of account fraud in Nigeria and other part of the world. Customers have now lost confidence in the banking system of Nigeria and this is one of the factors affecting the banking system of the country.

Therefore, the hypothesis is accepted that credibility (security & privacy) has a negative impact on consumer intention to adopt and use mobile banking is accepted because the research shows that it has a negative impact and has discouraged consumer intention to adopt and use mobile banking in Nigeria.

#### **4.5.7 Perceived self-efficacy**

**H8:** Perceived self-efficacy has a positive influence on consumer intention to adopt and use mobile banking.

**Question (users):** Has your previous use of electronic device (s) helped you to develop interest in using mobile banking facilities? Please give reason (if any).

**Question (non-users):** Will knowledge/experience in electronic devices help you develop interest in using mobile banking services? Please give reason (if any).

**Table 4.22: Perceived self efficacy (users)**

|           | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| Valid Yes | 69        | 71.9    | 71.9               |
| No        | 27        | 28.1    | 100.0              |
| Total     | 96        | 100.0   |                    |

**Table 4.23: Perceived self efficacy (non-users)**

|           | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| Valid Yes | 105       | 60.3    | 60.3               |
| No        | 69        | 39.7    | 100.0              |
| Total     | 174       | 100.0   |                    |

From table 4.22 and 4.23 above, this shows the numbers of users and non-users of the entire respondents. 71.9% of users confirmed that, their previous use of electronic device heard helped them to develop interest in using mobile banking facilities and 28.1% of users were not influenced by their previous use of electronic device. And 60.3% of non-user said, that previous knowledge and experience in electronic devices could help them to develop interest in using mobile banking services while 39.7% believes that, this would not influence their decision to use mobile banking services.

A respondent (non-user) said *“I believe if I have previous experience it is likely to help me to decide on its usage because, it will not be difficult to use”*.

A non-user 39.7% who said (NO) believes that *“previous experience will not influence my decision to use mobile banking service since there are more important issues like security to be considered”*.

One the non-users (39.75%) who said (NO) confirmed that *“I have little experience but this will still not influence me to use mobile banking service since my bank is yet to resolve the problem that my friend heard with his online transaction”*.

Looking at the numbers of users 71.9% who have been influenced by previous experience and the numbers of intending users 60.3% who said previous experience

could influence them, this are indications that perceived self-efficacy has a positive influence on consumer intention to adopt and use mobile banking. This hypothesis is supported and is in agreement with Luarn and Lin (2005) and Adesina et al (2010) in their research finding that perceived self-efficacy has a significant effect on consumer intention to adopt.

#### 4.5.8 Perceived financial cost

**H9:** Perceived financial cost has a negative influence on consumer intention to adopt and use mobile banking.

**Question (users):** Were you discouraged by the cost of using mobile banking service? Please give reason (if any).

**Question (non-users):** Were you discouraged by the cost of using mobile banking service? Please give reason (if any).

**Table 4.24: Perceived financial cost (users)**

|           | Frequency | Percent | Cumulative Percent |  |
|-----------|-----------|---------|--------------------|--|
| Valid Yes | 57        | 59.4    | 59.4               |  |
| No        | 39        | 40.6    | 100.0              |  |
| Total     | 96        | 100.0   |                    |  |

**Table 4.25: Perceived financial cost (non-users)**

|           | Frequency | Percent | Cumulative Percent |  |
|-----------|-----------|---------|--------------------|--|
| Valid Yes | 160       | 92.0    | 92.0               |  |
| No        | 14        | 8.0     | 100.0              |  |
| Total     | 174       | 100.0   |                    |  |

Table 4.24 and 4.25 above shows the total numbers of respondents for both users and non-users. 59.4% of users were discouraged by cost but went ahead to embrace the innovation due to its usefulness and some other factors while 40.6 were not discourage or consider the cost of service before applying for it.

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One of the respondents (user) said *“I believe cost should not be an issue considering the benefit associated with the service provided by the bank”*.

Another respondent said *“although I was somehow discouraged by the cost but I actually thought of the benefits I could derive from it and then, I later made up my mind to use it”*.

Another respondent (user) said *“well, I believe the price is still okay for me looking at the nature of my job, I can still afford the service charge when I consider factors such as time, convenience and the stress I will go through”*.

Equally, one of the respondents (user) said *“I have to consider the cost before applying for the service because using mobile banking should not be another means for the bank to levy unreasonable charges, as by engaging in mobile banking, I am doing the bank a service by reducing man hour to be deployed, and am wholly bearing any risk if peradventure I transfer to a wrong account in a different bank”*.

One of the respondents (user) said *“at times the transaction fails despite attendant service provider cost and this have discouraged some of my friends from using the service”*.

One of the users also said that *“as much as I would consider cost before harnessing the possibilities in mobile banking, cost would not discourage me as much because I think it is safer and its saves time and stress”*.

The majority of the non-users 92.0% were discouraged by the cost of using mobile banking services and to them it was too high, even if it is useful they will still not adopt the innovation.

One respondent non-user said *“I was really concern about the cost of the service because; I know newly introduced technologies are always costly and banks are found of introducing unreasonable fee”*.

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One of the non-users said *“as an undergraduate with limited fund I will consider cost of charges over every transaction in a way not to affect my plan/reason for mobile banking”*.

Another respondent (non-user) said *“if the time value and the transportation cost are far lesser than the total cost for mobile banking, then that could be a reason for refraining from using that service”*. This means that, some customers are willing and would not mind the stress of going for branch-base transaction if the cost is high.

Where the costs are low, this will encourage greater usage of the service (Min et al., 2008). Most of the users who are office workers who did not see cost as an issue could probably mean that, they earn substantial or above the minimum wage which could have made it possible for them to afford the service.

Basically, this research finding shows that perceived financial cost has a negative effect on consumer intention to adopt and use mobile banking in Nigeria so therefore, the hypothesis is accepted and this is similar to the findings of Gao and Owolabi (2008), Yang (2009), and Luarn and Lin (2005). This is also similar to the findings of Botha (2002:23) in a similar self related technology (internet banking) that high Internet access cost have hinder the growth of internet banking in South African due to the high cost of staying connected for longer hours.

#### **4.6 Conclusion**

From the overall finding above it shows that all the assessed factors have some level of significant on consumer intention to adopt and use mobile banking in Nigeria. Looking at the research frame work on awareness, perceived usefulness, perceived ease of use, perceived financial cost, self-efficacy and social influence they were found to be important factors which have positive influence on consumer decision to adopt mobile banking in Nigeria. Equally, the research shows that perceived credibility (security and privacy) and perceived financial cost have a negative influence on consumer decision to .....



adoption and use the service, which are the major hindrances to the low rate of consumer adoption of mobile banking in Nigeria and this was also confirmed by the e-banking officers that were interviewed.

# CHAPTER FIVE

## CONCLUSION, RECOMMENDATION

### 5.1 Introduction

This chapter shows the conclusion of this study and their relationship with relevant theories, and which draws a conclusion on the entire findings. The contributions and recommendation given in this research work can be used for future research and enhance further development in the banking sector. The limitations of the study are also discussed with a conclusion.

### 5.2 Conclusion

This research seeks to answer two questions in line with the research objectives. The qualitative and quantitative approach were used which contained opened and close-ended questionnaires, semi-structured interviews and the use of statistical analyses. Looking at the research question for this study, which was to assess the level of consumer knowledge about mobile banking in Nigeria in comparison with the present or current adoption rate, it clearly shows that, there is a high level of consumer knowledge about mobile banking in Nigeria but presently, the current rate of mobile adoption in Nigeria is very low when it is compared with the number of bank customers that have heard about mobile banking facilities. This shows that, consumers are yet to embrace this innovation due to many factors which have been described in the research framework. This also show that, been informed alone is not enough to persuade customers to use the self-service but this has to do with their behavioural intention to adopt the service.

The awareness created by banks to persuade customers are very important and the level of knowledge gained through various means of advertisement can't be over emphasized

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in helping to facilitate their decision in the self-service and this has been equally stated in the findings of researchers in the past (Gao and Owolabi 2008; Laforet & Li 2005).

Secondly, the research question also looked at the factors which influence the consumers to adopt the use of mobile banking services and this framework was used to analyse this. The proposed research framework developed were perceived financial cost, social influence, perceived credibility, perceived usefulness, perceived ease of use, perceived self-efficacy, compatibility and awareness. All these factors have some level of significant effect on consumer adoption rate in Nigeria. Looking at the research framework which is eight in numbers, it was observed that, two serve as a major drawback for consumer adoption of mobile banking services in Nigeria. From this research finding, perceived credibility (Security and privacy) and perceived financial cost are the major drawbacks while social influence, perceived usefulness, associated reward, perceived self-efficacy, compatibility, awareness and perceived ease of use are seen as determinants of mobile banking adoption in Nigeria.

The perceived credibility (Security and privacy) and perceived financial cost are the major drawbacks to the adoption of mobile banking in Nigeria. This research finding is consistent with the findings of other researchers of the past (Mattila 2003; Laforet & Li 2005; Luarn & Lin 2005; Yang 2009). This research was able to confirm that, there exist a relationship between compatibility and perceived usefulness because the perception that an innovation (mobile banking) is compatible with an individual's need will lead to the thought of its usefulness. Perceived credibility (Security and privacy) is seen as a major challenge for providers as this was asserted by Oxford business Group (2008) and Langendoerfer (2002). This finding shows that perceived credibility has a stronger effect on consumer's behavioural intention to use mobile banking than Technology Acceptance Model (TAM) variables (perceived usefulness and perceived

ease of use) as claim by Luarn and Li (2005), and this is also in line with the critical success factor pointed out for mobile commerce which was highlighted by Langendoerfer (2002) that, credibility can be a setback for the system.

The research shows that, for customers who have previous experience in using related technological device (internet banking) must have gained more confidence in their past usage of similar services and could have been the reasons for their decision to use the service and equally, few customers (users) are were willing to overlook the issues of security & privacy and financial cost and to take advantage of the benefit associated with mobile banking service. And the majority of the non-users were able to confirm that, security and privacy and the cost were their major concern for not using the service. From this research finding it was observed that, there exist a positive relationship between compatibility and perceived usefulness. When an innovation is seen as been compatible with an individual transaction or business needs then it leads to the thought of its usefulness by the customers. This research work is valid, useful and could arguably be used by other researchers and mobile banking operators in Nigeria to improve the rate of adoption on the usage of mobile banking in Nigeria.

### **5.3 Recommendation**

This research work has shown that mobile banking adoption in Nigeria is low as compared to developed countries of the world despite the high level of consumer knowledge in the country. The electronic bank officers confirmed that the current users are low compared to the customer base of each of their branches. This study can be used by banks to realise the benefits that could be derived if the innovation is well managed by the banks as well as taken drastic steps to address the issues militating against its growth.

The Nigerian banks need to increase and improve the level of awareness, as customers of banks said they have not been persuaded individually by the banks officials. The banks need to build the confidence of their customers which will lead to more patronage. There are evidences that many customers have seen the advert but are still sceptical about its usage. There is a need to change the customer's perception through a well structured advertisement and staff interaction in order to make them realise that the service is safe to use. The customers want to know the advantages and disadvantages associated with the service and as a result of this, they could weigh the costs and the benefits of using the self-service which in turn will reduce unnecessary worries and anxiety. This will also help customers to get clarification over confusing issues. The banks should also ensure that the cost of mobile banking service is reasonable and affordable for students, officer workers, business person, etc in order not to discourage current users and the intending users. It is therefore necessary for banks to improve the level of awareness and build customer confidence as this will help change customers attitude towards the system; this is supported by Mary (2005) that sufficient effort are not been made to increase customers confidence in online facilities. Due to fear of Freud and uncertainty many Nigerians has kept a distance from this innovation and they will rather go to the banks to carry out their banking transaction. Customers will be more willing to accept the innovation if the regulatory body central bank of Nigeria (CBN), takes the initiative to tackle the security issues of online bank transaction in the country. The horrible experience of Nigerians on the use of ATM machine is still very much present and up till now the regulatory body is yet to achieve success in this area though banks are currently replacing the old ATM cards and the old machines with more secure once and equally, the bank should constantly remind their customers on how to keep their pin and password safe for security purpose.

Attention should be given to students in educational institutions as they consist of a larger population of the country due to their favourable attitude towards new innovation and this is also evident that the majority of them are ATM users (Olatokun & Igbinedion 2009).

Equally, the banks staff should be trained and be knowledgeable about how to use the self-service so as to provide support for customers. The effectiveness and efficiency of mobile banking service in the bank will reduce man power labour and reduce the congestion at the banking hall. The higher the number of customers that use mobile banking services at a reduced price, the higher the return on investment for banks. Banks needs to visit tertiary institutions and make the benefit known to students through seminars, conference, etc, which is likely to increase their customer base and also activate intending users to use mobile banking service since there is high significant number of mobile phone users in this category (Adomi 2006). Equally, more attention should be given to the office workers having shown a positive attitude towards the innovation which gives them access to the service anytime and anywhere (Olatokun & Igbinedion 2009). It is also suggested that, banks should channel their attention towards this categorise of customers in order to increase mobile banking adoption in Nigeria.

#### **5.4 Limitation and future research**

The further research of this study's frame work can be useful to advance knowledge about factors which influence consumers' behaviour towards mobile banking in Nigeria. This research work has two limitations. Firstly, in order to have a wider range of customer's perspective a larger population size could be considered and be increased in order to have a more generalise view and also the research could be expended to reach more states in Nigeria, nevertheless this research is still valid having analysed the available sample size with open and close-ended questions. Secondly, it would be desirable if this research could have extensively use other statistical model such as linear regression, exponential and .....

polynomial regression model as this will help to identify the highest degree of change in consumers' behaviour within Nigeria. Equally, further research could be conducted by looking at the consumers' demographic characteristics and the adoption of mobile banking in Nigeria.

This research work has been able to contribute to the existing literature on consumer adoption of mobile banking in Nigeria and has also, bridge the gap which exists between developed countries and developing countries with particular reference to Nigeria. Equally, this research has been able to identify the factors that influence the consumer adoption of mobile banking in Nigeria.

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## **APPENDIX 1 Semi structured interview questions**

1. What qualifies a customer to use mobile banking facilities?
2. What means does the bank use to create awareness?
3. What is your view about the current adoption rate of mobile banking services of customers?
4. What are the current challenges/issues been faced by the bank about the adoption rate of mobile banking?
5. What are the mobile banking development challenges in Nigeria?
6. What do you think contribute to the adoption rate in the bank (Whether Low or High)?
7. What do you think contribute to the adoption rate in Nigeria (Whether Low or High)?
8. What are the major issues faced by the customers in regards to mobile banking facilities?

## APPENDIX 2 Questionnaire

17<sup>th</sup> January, 2012.

My name is Babajide Adesinasi and I am conducting research on mobile banking in Nigeria for my master's degree in Global Marketing at the University of Wales, United Kingdom. The title of my research project is mobile banking and consumer behaviour adoption in Nigeria. I would like you to answer the questions, as this will help me to complete my dissertation. The use of mobile phone to make transaction such as fund transfer, viewing of account balance, notification of account balance, payment of bill, etc., is known as mobile banking and this facilities or service is provided by banks to its customers. The aim of this research project is to improve the mobile banking service to Nigerian customers. I need only 15 minutes of your time to complete the questionnaire. The information given will be treated as confidential and for the purpose it is been collected for. Please, your assistance will be highly appreciated.

Thank you.

**Full name:** .....

.....

## Section 1

### Personal Data

Gender:  Male  Female

Age Range:  Below 20  21-30  
 31-40  41-50  Above 51

Occupation:  Student  Office worker  Business person  
 Others please, specify.....

## Section 2

### 1. Mobile banking usage

1. Do you own a mobile phone?

Yes  No

2. Have you heard of mobile banking before?

Yes  No

3. Where did you hear about mobile banking?

Friends  Relative  Banks  
 Advert (TV, Radio, Newspaper...etc.)  Others please,  
specify.....

4. Do you use mobile banking services?

Yes  No

5. How do you conduct mobile banking transaction?

SMS  MMS  Internet

## Section 3:

### To be fill by bank customers

Please read each statement and then put a score in the box, which best indicates your answer to the question.

### Users

#### Awareness

1. Has awareness helped you to start using mobile banking service? Please give reasons (if any)

Yes

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**Perceived usefulness**

2. Did you consider the usefulness of mobile banking before applying for mobile banking services? Please give reasons (if any)

Yes

**Perceived ease of use**

3. Did you consider the simplicity of mobile banking services before applying for it? Please give reasons (if any)

Yes  No

**Compatibility**

4. Did you consider if mobile banking services would meet your important transaction needs before applying for it? Please give reasons (if any)

Yes

**Social influence**

5. Did your friend(s), parent(s), family (ies) or colleague(s) influence your decision to adopt mobile banking services?

Yes

**Perceived credibility**

6. Did you see security and privacy as an issue before applying to use mobile banking services? Please give reasons (if any)

Yes

**Associated reward**

7. Were you motivated by any reward by your bank to use mobile banking services?

Yes

If (No) will reward have further motivated you? Please, state reason.....

**Perceived self-efficacy**

8. Has your previous use of electronic device (s) helped you to develop interest in using mobile banking facilities? Please give reason (if any).

Yes  No

**Perceived financial cost**

9. Were you discouraged by the cost of mobile banking service before applying for the service? Please give reason (if any).

Yes  No

**Non-users**

**Awareness**

1. Will the awareness of mobile banking help convince you to start using the service? Please give reason (if any).

Yes  No

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**Perceived usefulness**

2. Will the usefulness of mobile banking services help your decision to use the service? Please give reason (if any).

Yes  No

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**Perceived ease of use**

3. Will you consider mobile banking facilities if it was simple to use on your mobile device? If (yes) has it been easy to use. Please give reasons (if any)

Yes  No

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**Compatibility**

4. Would you have considered mobile banking services if it was going to meet your important transaction needs? Please give reason (if any).

Yes  No

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**Social influence**

5. Will you be influenced to use mobile banking facilities if people in your network such as friends, parents, families or colleagues use it? Please give reason (if any).

Yes  No

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**Perceived credibility**

6. Do you see security as an issue for not using mobile banking services? Please give reason (if any).

Yes  No

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**Associated reward**

7. Would you have been further motivated if there was any reward attached to mobile banking services? Please, state reason (if any).

Yes

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**Self-efficacy**

8. Will knowledge/experience in electronic devices help you develop interest in using mobile banking services? Please give reason (if any).

Yes  No

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**Perceived financial cost**

9. Were you discouraged by cost not to apply for mobile banking service? Please give reason (if any).

Yes  No

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10. Please indicate how your bank can improve mobile banking service to you.

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### APPENDIX 3 Name of mobile banking services

| S/N | Name of Bank                     | Mobile Banking services                    |
|-----|----------------------------------|--|
| 1   | Guaranty Trust bank              | GTmobile                                   |
| 2   | Afribank Nigeria Plc             | Afribank m-banking                         |
| 3   | First bank Nigeria Plc           | First bank                                 |
| 4   | Sky bank                         | Skymobile                                  |
| 5   | Oceanic bank                     | Oceanic mobile banking                     |
| 6   | Intercontinental Bank Plc        | Intercontinental mobile<br>Bank (I-mobile) |
| 7   | United Bank for Africa Plc (UBA) | U-mobile banking                           |
| 8   | Bank PHB                         | PHBmobile mobile<br>banking                |
| 9   | Sterling bank Nigeria Ltd        | Sterling bank mobile<br>banking            |
| 10  | Access Bank                      | Accessmobile                               |