

Does Mobile Banking Influence Service Delivery? An Empirical Investigation of the Nigerian Money Deposit Banks

OLADEJO M.O. and YINUS .O.

Department of Management and Accounting,

Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria.

E-mail: yinusoluwaseun003@gmail.com

ABSTRACT

E-banking is revolutionizing the way business is conducted in every industry. Banks are no exemption to this revolution, this study aim by the side of investigating the influence of mobile banking on service delivery of Nigeria money deposit banks. The study was carried out in Abuja (FCT) with Three hundred (300) Questionnaires administered and distributed to both senior & junior staff of the selected banks, Twenty (20) staff each was picked from the fifteen (15) selected banks. Two hundred and Sixty (260) Questionnaires were found useful for the purpose of the study representing 86.7% of the total questionnaire distributed. Data collected coded and analyzed using frequency table, percentage and mean score while non-parametric statistical test, ANOVA was used to test the formulated hypothesis using STATA 10 data analysis package/software to investigate the influence of mobile banking on service delivery by the Nigeria money deposit banks and the relationship between mobile banking and service delivery in the sampled banks. The result of the findings reveals that there is significant relationship between mobile banking and service delivery of the Nigeria money deposit banks. The result of hypothesis tested showed that mobile banking has a positive influence on the performance of Nigeria money deposit banks through service delivery and also influence the level of economic activities. To this end, It is recommended that Investment in Mobile technology should form an important component in the overall strategy of NMDBs operators to ensure effective performance, The bank management should provide adequate Mobile banking service technology and proper training should be given to the employee in other to meet the quality of service needed by the customers. Finally Customers' interest and orientation should be seen as ultimate in the implementation of this machinery especially in the usage of the devices

Keywords: *E-banking Product, Mobile Banking, Service Delivery, Customers Service Satisfaction, Nigerian Money Deposit Banks*

INTRODUCTION

The importance of mobile banking in developing countries cannot be overemphasized as the cost of information and communication technology (ICT) is falling. The availability and use of ICT enhances efficient delivery of basic amenities, which facilitates the social, economic, cultural and political growth of developing countries. The advent of mobile

technology and its devices have brought about efficiency in the manner in which commercial and business activities are performed (Tiwari and Buse, 2007; UNCTAD, 2007). One such technology is mobile telephony. Mobile telephony serves as a platform for launching innovative mobile phone applications and services (UNCTAD, 2007). The utilization of mobile technologies for commercial activities initiates the concept of mobile commerce (m-commerce). Mobile Banking can be defined as “a form of banking transaction carried out via a mobile phone (Salem and Rashid 2011). Mobile banking offers a potential solution for the millions of people in emerging markets that have access to a mobile phone, yet remain excluded from the financial mainstream. It can make basic financial services more accessible by minimizing time and distance to the nearest retail bank branches as well as reducing the bank’s own overheads and transaction- related costs (CGAP, 2010). Mobile banking presents an opportunity for financial institution to extend service to new customers (Lee and Kim 2009). The convergence of telecommunication and banking services has created opportunities for the emergence of mobile commerce, in particular mobile banking. Mobile banking services provide time independence, convenience and promptness to customers, along with cost savings. Mobile banking presents an opportunity for banks to expand market penetration through mobile services (Lee and Kim, 2009).

According to the International Telecommunication Union (ITU) report, there is significant growth in the use of mobile phones, with over 90% of the population in South Africa using them (ITU, 2009). Mobile banking is a must-have technology for any bank; customers view online access as a veritable right and every competitive bank will offer some form of mobile banking technology. The quality of mobile banking service offerings is where banks can stand out; by providing greater convenience, higher customer service and increased customization. For banks seeking a mobile banking technologies that can truly help them differentiate from competitors (SunGard financial system 2013). However, mobile banking in developing countries such as Nigeria started coming into light in the new millennium after the introduction and acceptance of mobile phone, the relationship between mobile banking and mobile phone are mainly used to provide mobile banking service. The technologies generally used for mobile banking are Interactive Voice Response (IVR), Standalone Mobile Application Clients, Short Messaging Service (SMS) and Wireless Application Protocol (WAP).

The emergence of Global System for Mobile (GSM) has led to improvements in efficiency and productivity, reductions in transaction costs, increased service innovation and better quality of life for the rural dwellers. The advent of mobile phone with high quality of technology has enabled new ways to conduct banking businesses, resulting in creation of new institutions, such as mobile banks, mobile brokers and wealth managers. In the present banking system, excellence in service delivery is the most important tool for sustainable business growth. Customer Complaints are part of the business life of any corporate entity. This is more so for banks because they are service organisations. As a service organization, service delivery and customer satisfaction should be the prime concern of any bank. The bank believes that providing prompt and efficient service is essential not only to attract new customers, but also to retain existing customers.

However, banks minimize instances of customer complaints and grievances through proper service delivery. Service Delivery is an important mechanism that shows how to measure service results with meaningful metrics and using the metrics to drive continuous service improvement. Service Delivery fosters a corporate behavior of responsible use of Information Technology services to maximize corporate profits. Most importantly, Service Delivery fosters true business-Information Technology partnerships to the benefit of the company as a whole. Service delivery has been described to be one of key performance indicators of an organisation. The extent to which customer are satisfied with the service rendered has great influence on the overall performance and must be taken seriously by players in the commerce.

STATEMENT OF THE PROBLEM

In Nigeria, customers of banks today are no longer about safety of their funds and increase returns on their investments only. Customers demand efficient, fast and convenient services. Customers want a Bank that will offer them services that will meet their particular needs (personalized Banking) and support their Business goals. Mobile banking came into existence in order to fill the vacuum created by adoption of traditional techniques afore adopted in the Nigeria banking system such as delay of service, lack of information backup, lack of interconnectivity and networks failure. Furthermore, the conclusion of (Salem and Rashid 2011) that customer satisfaction has not been studied specifically for banking sector firms with respect to technology adoption called for informed empirical investigation. Evidences from the literature show that quality of services and products is a key determinant of customer satisfaction, customer loyalty and the level organizational service delivery, a phenomenon that also holds true for electronic service providers.

Mobile banking is expected to improve banks operations in term of service delivery. The extent to which the use of mobile phone by banks customers can improve service delivery merit investigation. The influence of mobile phone on banks service delivery has not been greatly explored in a developing economy like Nigeria. Also, the recent proposed cashless policy of the Central Bank of Nigeria (CBN 2012) has created challenges for the bankers and other players in commerce on attainment customer service satisfaction in cashless society.

Few studies in Nigeria focus on mobile banking while more on IT, ATM and Internet Banking, This is because mobile banking service is just expanding in Nigeria. However this study aims to investigate the influence of mobile banking on service delivery in the Nigeria money deposit banks. Specifically, the study will answer the following research questions:

- (a) Is there any significant relationship between mobile banking and service delivery of Nigeria money deposit banks?
- (b) How does mobile banking influence service delivery of Nigeria money deposit banks?
- (c) What are the factors that influence the customer's adoption of mobile banking in Nigeria?

RESEARCH HYPOTHESIS

The hypotheses for this study are stated in the null form as follows:

H₀₁: Mobile banking has no significant influence on service delivery of Nigeria money deposit banks.

LITERATURE REVIEW AND CONCEPTUAL EXPLANATION

Mobile banking has resulted as new service delivery channels for banking products and services in Nigeria through mobile technology. Mobile banking is now thought to hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and to sell or buy products and services (Lewin and Sweet 2005). Mobile banking has numerous benefits for both customers and banks. As far as the customers are concerned, it provides increased convenience, expanded access and significant time saving. On the other hand, from the banks' perspective, the costs of delivering mobile bank services are substantially lower than those of branch based services, (Blake, 2004). Mobile phone is used by Nigerians mostly to communicate with another. He explained that students used it to communicate with their course mates, friends, lecturers and family relatives. Additionally, family matters, finance, and academic matters constitute the topics/ subject of mobile communication for a majority of students. Mobile phones limit the need for students to travel as well as facilitating the of exchange information as the need may arise.

Several banks in Nigeria have launched the mobile banking services that enable customers to carry out simple transactions based on Short Message Services (SMS) technology with customer's mobile phones serving as the terminals. Such transactions include account balance enquiries, funds transfers between customer's own accounts and to other account with the same bank, transaction tracking and third party payments, such as bill payments, cheque book request and balance confirmation (UNCTAD, 2007). Mobile banking involves the use of mobile phones for settlement of financial transactions; it supports person to person transfers with immediate availability of funds for the beneficiary. Mobile payments use the card infrastructure for movement of payment instructions as well as secure SMS messaging for confirmation of receipt to the beneficiary. Mobile banking services have a very exciting potential within Nigeria, given the low infrastructural requirements and a rapidly increasing mobile phone penetration (Blake, 2004). Researchers at all spheres of the world such as (Natarajan et al., 2010; Aker 2010) had contributed in varied degrees to the existence of mobile banking and its originality into servicing customers effectively. Those scholars have evaluated some of the services mobile banking can offer, such services include; Account information, Payments and transfers, Investments and Content service. However, mobile banking services are often differentiated as 'push' or 'pull'. Pull is when a customer explicitly requests a service or information from the bank. While push, occurs when a bank sends an alert to a customer when their accounts goes below a threshold level. Pull services are often of higher security measures. More recently, as new data were made available and new methodologies were applied, empirical investigations have found evidence that mobile banking is associated with improvements in service delivery

performance, in intermediate measures and in economic growth (Lee and Kim 2009; CGAP, 2010; Amin 2008; Goyal et al., 2008).

SERVICE QUALITY AND CUSTOMER SATISFACTION

Service providers have embraced the relationship marketing, to cultivate a long term relationship so that, their customers can move along the 'ladder of customer relationship' (Payne et al., 1995). To attain customer loyalty, long-term viability and profitability and consequent success, institutions are placing increasing emphasis on the customer satisfaction (Reichheld et al., 2000). Excellent service is a profit strategy and the ultimate aim of the company is to be continually productive and profitable.

In the off-line environments, it is common knowledge that the quality of services and products is a key determinant of customer satisfaction and customer loyalty (Parasuraman et al., 1988). Recent empirical evidence shows that, meanwhile, this holds true also for electronic service providers. The quality of services delivered through a web site has become a more significant success factor than low prices or being the first mover in the market space (Reibstein, 2002). Parasuraman et al., (2000) emphasises the fact that past conceptualisations of service quality created to evaluate traditional services and characterised by personal interaction between customer and employees cannot be adequately applied to virtual environments, where customers interact with technology rather than with service personnel.

There are many studies done on traditional service quality. However, they do not elicit the comprehensive dimensional aspect of e-service quality (e-SQ) because studies on service quality were made in the physical retail arena (Parasuraman et al., 2002). Banks offering online banking, unlike traditional banks, seldom have interpersonal interactions with their customers in their banking service delivery process. The service quality dimension observed in traditional banking environment will not be an appropriate set of guidelines for effectively managing online banking service quality.

Mobile Banking Services

Mobile banking services are expected to prove a major catalyst in Africa's economic development, delivering quick, convenient and secure transaction services, particularly to those in the lowest income strata (www.gtnews.com). Mobile payment known also as Mobile wallet is an alternative payment method. Instead of paying with cash, cheque or credit cards, a consumer can use a mobile phone to pay for a wide range of services and digital or hard goods such as: transportation fare (bus, subway or train), parking meters and other services; books, magazines, tickets and other hard goods; Music, videos, ringtones, online game subscription or items, wallpapers and other digital goods.

Availability of Global Systems for Mobile (GSM) in Nigeria, have created an opportunity for several banks in Nigeria to launch mobile banking services that enable customers to carry out transactions on customer's mobile phones, serving as the terminals. Such transactions include account balance enquiries, funds transfers between customer's own accounts and

to other account with the same bank, transaction tracking and third party payments, such as bill payments, cheque book request and balance confirmation. Mobile-banking service have a great advantage over internet-backed services in terms of access conditions, in that they are used in both online and offline transactions. Nevertheless, even m- banking services are subject to limitations, as they are connected via mobile phone, a medium unsuitable for higher-level security demands. Money transaction is authenticated via text message (SMS) or automated mobile call. There are four primary models for mobile banking service identified in the literature (Aker 2010) which include;

- SMS based transactional Alert,
- Direct Mobile Billing,
- Mobile Web Payments (WAP),
- DCB mobile banking.

Mobile banking services has been well adopted in many parts of Europe and Asia (www.ericsson.com). Most deposit money banks in Nigeria offer mobile and/or SMS banking services. Mobile banking enables customers' (typically with Java enabled mobile phones) to access their card linked accounts through their mobile phones. It allows customers to carry out basic banking transactions including but not limited to balance enquiry, Statement request, Transfers between own accounts, Third party transfer, Airtime purchase. SMS banking services are messages that the bank chooses to send out to a customer's mobile phone, without the customer initiating a request for the information. Typically messages could be: Messages alerting debit or credit transactions in the customer's bank account, marketing messages on product and services. These study will focus on mobile banking as one of the recent e-banking services provide by the Nigeria banking sector, with the aim to examine mobile banking impact on the service delivery of the banking industry in Nigeria.

Mobile Banking Service Technology

Mobile business is any activity conducted over a wireless telecommunications network or from mobile devices. This includes business to customer (B2C) and business to business (B2B) commercial transactions as well as the transfer of information and services via wireless mobile devices. The mobile technology landscape provides various possibilities for implementing Mobile banking service. Essentially, a GSM mobile phone may send or receive information (mobile data service) through three possible channels – SMS or USSD, WAP/GPRS. The choice of the channel influences the way mobile banking service schemes are implemented. Secondly, the mobile banking client application may reside on the phone or else it may reside in the subscriber identity module (SIM).

- (a) Short Message Service (SMS):** This is a text message service that enables short messages (140-160 characters) that can be transmitted from a mobile phone. Short messages are stored and forwarded by SMS centers. SMS messages have a channel of access to phone different from the voice channel. SMS can be used to provide

information about the status of one's account with the bank (informational) or can be used to transmit payment instructions from the phone (transactional).

- (b) Unstructured Supplementary Services Delivery (USSD):** Unstructured Supplementary Service Data (USSD) is a technology unique to GSM. It is a capability built into the GSM standard for support of transmitting information over the signalling channels of the GSM network. USSD provides session-based communication, enabling a variety of applications. USSD is session oriented transaction-oriented technology while SMS is a store-and-forward technology.
- (c) WAP/GPRS:** General Packet Radio Service (GPRS) is a mobile data service available to GSM users. GPRS provides packet-switched data for GSM networks. GPRS enables services such as Wireless Application Protocol (WAP) access, Multimedia Messaging Service (MMS), and for Internet communication services such as email and World Wide Web access in mobile phones.
- (d) Phone-Based Application (J2M E/B REW):** The client mobile banking service application can reside on the mobile phone of the customer. This application can be developed in Java (J2ME) for GSM mobile phones and in Binary Runtime Environment for Wireless (BREW) for CDMA mobile phones. Personalization of the phones can be done over the air (OTA).
- (e) SIM-Based Application:** The subscriber identity module (SIM) used in GSM mobile phones is a smart card i.e., it is a small chip with processing power (intelligence) and memory. The information in the SIM can be protected using cryptographic algorithms and keys. This makes SIM applications relatively more secure than client applications that reside on the mobile phone. Also, whenever the customer acquires a new handset only the SIM card needs to be moved. If the application is placed on the phone, a new handset has to be personalized again.

Mobile Banking Tools and Banking Models

- (a) The Internet:** The internet is a global system of interconnected computer networks that uses the internet protocol suites to serve billions of users worldwide, Wikipedia. The mobile banking system is routed through the internet to allow accessibility to customers anywhere and at virtually all times.
- (b) The Mobile Phone:** This is a device that can be used to make and receive telephone calls over a radio network. Lai and Li, 2005; Cheng and Yeung, 2006, observed that trust has a more direct effect on a customer's attitude than perceived ease of use in the electronic banking context. In most developing nations, the automation of the banking services has become a critical factor in the process of attaining efficiency in delivering customer services. Zhu et al., (2005) postulated that a pleasant experience of automated services provides enhanced value to the customers and attract them in

undertaking improved business with their banks. However, for mobile banking to be effective, it has to be supported by one of the under listed models:

- i. The Bank-Focused Model:** This is a model where a bank delivers banking services to existing and prospective bank customers using the mobile phone as a delivery channel. This model can only be deployed by a licensed deposit-taking financial institution. Licensed deposit-taking financial institutions, under this model shall include, deposit money banks, microfinance banks and discount houses. The participants in this model shall include the initiating bank, its Information and Communication Technology (ICT) partners and the customers. The Financial Institutions shall be responsible for;

 - Seeking and obtaining necessary approvals from the regulatory authorities.
 - Deployment and delivery of the mobile banking service to the customer.
 - Ensuring that the mobile banking service solution meets all specified mobile service standards as stated in the mobile banking services regulatory framework.
 - Putting in place adequate measures to mitigate all the risks that could arise from the deployment and use of its mobile banking service solution.

- ii. The Bank-Led Model:** This is a model where a bank, or a consortium of banks, partnering with other organizations, jointly seeks to deliver banking services leveraging on the mobile banking system. This model shall be applicable only in a scenario where there exists collaboration between a licensed deposit-taking financial institution(s) and an organization duly verified by the partner bank(s). Licensed deposit-taking financial institutions, under this model shall include, deposit money banks, microfinance banks and discount houses. The participants in this model are the initiating bank(s), the partner organizations (e.g. scheme operator, infrastructure provider's telecommunications companies, independent operators and the customers. The Financial Institutions shall:

 - Provide all financial services for the operation of the mobile payments service
 - Verify, approve and guarantee the creditability and integrity of the partner organization. The Partner to the financial institution shall:
 - provide and manage the technology required to deliver mobile payment services to the customer
 - Provide the agent network required to extend all the proposed services to the marketplace
 - Facilitate international remittances to both scheme and non –scheme recipients.

- Ensuring that the proposed solution meets all the regulatory standards and requirements specified in the mobile banking services regulatory framework
 - Provide the agent network required to support the delivery of services to the customer
 - Ensuring that international remittance messages shall, at a minimum, be conveyed to the recipient through secured SMS.
- iii. Non-Bank Led Model:** This model allows a corporate organization that has been duly approved by to deliver mobile payments services to consumers in the country. This model shall be applicable to any organization other than a licensed deposit money bank and telecommunication companies. Corporate organizations, under this model, include switching companies and payments system service providers. The participants in this model are the corporate organization, its partners and the consumers. The corporate organization would provide and manage the technology required to deliver mobile banking services to the customer and provide the agent network required to extend all the proposed services to the market place.

MOBILE BANKING AND SERVICE DELIVERY IN THE NIGERIAN MONEY DEPOSITS BANK

The introduction of ICT has improve banking efficiency in rendering services to customer Mobile banking has resulted as new service delivery channels for banking products and services in Nigeria through mobile technology. Mobile banking is now thought to hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and to sell or buy products and services. Mobile banking has numerous benefits for both customers and banks. As far as the customers are concerned, it provides increased convenience, expanded access and significant time saving. On the other hand, from the banks' perspective, the costs of delivering mobile bank services are substantially lower than those of branch based services. Service Delivery is an important mechanism that shows how to measure service results with meaningful metrics and using the metrics to drive continuous service improvement. Service Delivery fosters a corporate behavior of responsible use of Technology services to maximize corporate profits. Most importantly, Service Delivery promotes true business- Technology partnerships to the benefit of the company as a whole. The extent to which customer are satisfied with the service rendered has great impact on the overall performance of such organisation.

A key component of improved customers' focus is the implementation of tools that allow development of better relations between banks and their customers (customer bank relationship). The banking industry today is witnessing heavy IT revolution to the extent that wireless and mobile technologies are becoming widely accepted in the banking industry. Customers now have freedom to pay bills; plans payments while held in traffic jams, receive updates on banks marketing, efforts, birthday and holiday festival greetings and other personal information. Mobile banking also welcomed other financial services like share trading, sophisticated enquiry based banking services for transaction alerts,

minimum balance alerts, account balance enquiry, cheque book request, and bill payment alerts. Mobile banking services includes, performing balance checks, account transactions payments via mobile device such as phones.

CHALLENGES FACING MOBILE BANKING SERVICES IN THE NIGERIAN MONEY DEPOSITS BANKS

(a) Mobile phone operability: There are a large number of different mobile phone devices and it is a big challenge for banks to offer mobile banking solution on any type of device. Some of these devices support Java ME and others support s Application Toolkit, a WAP browser, or only SMS. Initial interoperability issues however have been localized, with countries like India using portals like R-World to enable the limitations of low end java based phones, while focus on areas such as South Africa have defaulted to the USSD as a basis of communication achievable with any phone. The desire for interoperability is largely dependent on the banks themselves, where installed applications (Java based or native) provide better security, are easier to use and allow development of more complex capabilities similar to those of internet banking while SMS can provide the basics but becomes difficult to operate with more complex transactions.

(b) Security of transactions: Security of financial transactions, being executed from some remote location and transmission of financial information over the air, are the most complicated challenges that need to be addressed jointly by mobile application developers, wireless network service providers and the banks' IT departments. The following aspects need to be addressed to offer a secure infrastructure for financial transactions over wireless network:

- Physical part of the hand-held device. If the bank is offering smart-card based security, the physical security of the device is more important.
- Security of any thick-client application running on the device. In case the device is stolen, the hacker should require at least an ID/Password to access the application.
- Authentication of the device with service provider before initiating a transaction. This would ensure that unauthorized devices are not connected to perform financial transactions.

METHODOLOGY

As at present there are 20 money deposit banks in Nigeria (CBN 2013). All these banks will make up the population of this research. The number of quoted Money deposit banks in Nigeria is now fifteen (NSE Daily listing 2013). The study will focus on all the fifteen quoted banks with branches in Abuja, Nigeria. The fifteen banks are expected to have fulfilled NSE listing requirement and thus disclosure of relevant information for the study. The sampling frame of this study comprises of both senior and junior staff in the relevant departments of the fifteen selected quoted banks. Abuja was chosen being the federal capital and for dominance of banking activities even as the Nigerian Financial policy implementation

directory centre. The selection of banks was done using purposive sampling while bank staffs were selected at random. Three hundred (300) Questionnaires were administered and distributed to the staff of the fifteen quoted selected banks in their various branches. Twenty (20) staff each was picked from the fifteen (15) quoted selected banks. Two hundred and Sixty (260) questionnaires were found useful for the purpose of the study representing 86.7% of the total questionnaire distributed. The questionnaire consists of questions that are related to mobile banking and service delivery in banking system as identified in the literature. Likert five point scales ranging from 1-5(1=strongly agree and 5=strongly disagree) were used as a basis of the questions. Data collected were coded and analyzed using frequency table, percentage and mean score while non-parametric statistical test, ANOVA was used to test the formulated hypothesis using STATA 10 data analysis package/software.

LIST OF SAMPLED BANKS FOR THE STUDY

As evidenced in Table I below there were twenty (20) banks in Nigeria out of fifteen (15) quoted and listed in the Nigerian Stock Exchange. All the fifteen quoted banks were sampled for the purpose of the study. This is because of the intension to use large number to assist in solving the research questions as to the adoption and application of mobile banking model in the Nigerian money deposits banks.

Table I: List of Quoted and Unquoted Banks Sampled for the Study:

Numbers of Banks	Quoted/ Unquoted	Sampled/ Not sampled	Addresses of the Sampled Banks in Abuja.
1. Access Banks	Quoted	Sampled	Gwagwalada branch, 353, specialist hospital road, Gwagwalada Abuja.
2. City Bank	Unquoted	Not sampled	*****
3. Diamond Bank	Quoted	Sampled	Garki branch, plot 1486, Ahmadu Bello way, Garki2, Abuja.
4. Eco Bank	Quoted	Sampled	Wuse 2 branch, No.1, Atabarat street, off Cairo street, Wuse 2 Abuja.
5. Enterprise Bank	Unquoted	Not sampled	*****
6. Fidelity Bank	Quoted	Sampled	Wuse 2 branch, plot 363, Nanka close, Wuse 2 District, Wuse Abuja.
7. First Bank	Quoted	Sampled	Kubwa branch, Plot No.B3, Gada Nasko Road, Opposite Total fuel Station, phase 2, site 2, Kubwa, Abuja.
8. FCMB	Quoted	Sampled	Area 3 branch, Legion House, Area 3, Garki Abuja.
9. GTB	Quoted	Sampled	Utako branch, beside Ifesinachi near Utako market, Utako, Abuja
10. Key stone Bank	Unquoted	Not sampled	*****
11. Main street Bank	Unquoted	Not sampled	*****
12. Skye Bank	Quoted	Sampled	Bwari branch, along Nigeria Law School, Bwari, Abuja.
13. Stanbic Bank	Quoted	Sampled	Plot 437, No.8, Langtang Close off Tafawa Balewa Way Abuja.
14. Standard Chartered Bank	Unquoted	Not sampled	*****
15. Sterling Bank	Quoted	Sampled	Plot 700, Seda Close, Off Tafawa Balewa Way, Area 8, Abuja.
16. Union Bank	Quoted	Sampled	Garki branch, Plot 1072, J.S Tarka/Faskari Street, Area3, Abuja.
17. UBA	Quoted	Sampled	Wuse 2 branch, No.18, Adetokunbo Crescent, Wuse 2, Abuja.
18. Unity Bank	Quoted	Sampled	Head office branch, plot 785 Herbert Macaulay Way, CBD Abuja.
19. Wema Bank	Quoted	Sampled	Oyo house, Ralph Shoreline Street, CBD, Abuja.
20. Zenith Bank	Quoted	Sampled	Wuse 2 branch, plot 2883, Algeria Street, Zone 3, Wuse, Abuja.

Number of Quoted and Sampled Banks = 15

Number of Unquoted and Not Sampled Banks = 5

Source: CBN 2012, Business Day News 2012

RESULTS AND DISCUSSIONS

The aim of the study was to analyse the relationship between mobile banking model and service delivery in the Nigerian money deposit banks. Socio economic characteristics of the respondent bankers were first analysed to assess the demographic and personal influence of the respondents on mobile banking-service delivery model and the results was as shown in Table II below. The table II reveals that, 32.31% of respondents were male and 67.69% were females. Therefore, it shows that majority of the staff in the sample banks are Females. Similarly, the table shows that 23.08% of the respondents were aged of less than 25, 54.62% of the respondents were aged between 26-40, while 22.31 were 41 and above. Hence the data above shows that majority of the respondents were of between 26-40 years. In addition, Also 53.08% were married, 41.54% were single, and 4.23% were divorce while 1.15% were widow. Hence the data show that majority staffs of the sampled banks were married. Further the table also reveals that 29.23% respondents were NCE/OND/HND holder, 52.31% were B.sc holder while 18.46% were professionals and others. The table also signifies that 6.92% of the respondents were senior managers, 28.46% were Cashiers, 42.31% were Marketers, 11.54% were in the Customer Care and 10.77% were Accountants. Hence, majority of the respondents were in the marketing department, and this reveals that marketing departments are vital departments that most sectors should consider when establishing a business. Finally, the table reveal that 26.92 has less than 5 yrs experience, 60.77 has 6-10yrs,11.92 has 11-14yrs experience while 0.38 has 15yrs experience most. Hence this shows that majority of the respondents have experience about banking service.

Table II: Frequency and Mean Score Distribution of Respondent Demographic Profile

Variables	Number	Percentage
Sex:		
Male	84	29.60
Female	<u>176</u>	<u>70.40</u>
	<u>260</u>	100.00
Mean- 1.676923		
Age:		
Less than 25	60	23.08
26-40	142	54.62
41yrs Above	<u>58</u>	<u>23.31</u>
	<u>260</u>	100.00
Mean- 1.992308		
Marital Status:		
Married	138	53.08
Single	108	41.54
Divorced	11	4.23
Widowed	<u>3</u>	<u>1.15</u>
	<u>260</u>	100%
Mean:1.534615		
Educational background:		
NCE/OND	76	29.23
BSC/MSC	136	52.31
Professional& other	<u>48</u>	<u>18.46</u>
	<u>260</u>	<u>100%</u>
Mean:1.892308		
Position Held:		
Senior manager	18	6.92
Cashier	74	28.46
Marketer	110	42.31
Customer care	30	11.54
Accountant	<u>28</u>	<u>10.77</u>
	<u>260</u>	100.00
Mean-2.926923		
Job Experience :		
Less than 5yrs	70	26.92
6-10	158	60.77
11-14	31	11.92
15 & Above	<u>1</u>	<u>0.38</u>
	<u>260</u>	100.00
Mean- 1.926923		

Source: Computations and Output of STATA10 based on Authors' Field Survey (2013).

MOBILE BANKING INFLUENCE ON SERVICE DELIVERY IN NIGERIA MONEY DEPOSIT BANKS

Table III reveals that majority of the respondents (76.92%) of the total respondents agreed that the introduction of e banking service product has increased the strength of customer system in terms of financial service patronage, 16.92% of them disagreed, and 6.16% of the respondent are undecided. Hence this shows that introduction of mobile banking service has increased the strength of customer system in terms of financial service patronage. Similarly, the table indicates that large number of respondents, (83.61%) of the respondents agreed that introduction of electronic payment products such as mobile banking; ATM internet has increased the level of economic activities, while 9.62% also disagreed to the opinion and 5.77% undecided. Also, table III indicate that a large number of respondents, i.e.75.00% of the respondents, agreed that Mobile banking improve customer loyalty of the Nigeria money deposit banks, while 9.62% also disagreed while 15.38% undecided. moreover, 78.46% were agreed, 15.77% disagreed while 5.77% undecided that Mobile banking positively influence the service rendered by the Nigeria money deposit banks. This indicates that mobile banking positively influence the service delivery of the Nigeria money deposit banks. Furthermore, 75.01% of the respondents agreed, 15.38% were undecided while 9.61% disagreed, that Infrastructure deficiency such as critic power supply and communication link are challenges facing mobile banking service .Hence, this show that majority believed that Infrastructure deficiency such as critic power supply and communication link are challenging facing mobile banking service. Similarly, from the table III, 73.08% of the respondents strongly agreed that there is significant relationship between mobile banking and service delivery of the Nigeria money deposit banks, while 13.85% were undecided and 13.07% disagreed. Hence, it is concluded that there is significant relationship between mobile banking and service delivery by the Nigeria money deposit banks. Likewise, 19.23% of the respondents agreed, 77.92% disagree while 3.85% were undecided that Mobile banking has no negative effect on the performance of Nigeria money deposit banks.

Hence, these signify that majority support that Mobile banking has no negative effect on the performance of Nigeria money deposit banks. Also, 7.00% of the respondent that agreed that mobile banking does not positively influence service delivery of Nigeria money deposit banks, 81.15% disagreed while 11.15% were undecided that mobile banking does not positively influence service delivery of Nigeria money deposit banks. Hence, the majority respondents disagree with the opinion that mobile banking does not positively influence service delivery of money deposit banks in Nigeria. Besides the Table III reveal that 9.62% of the respondents agreed, 68.46% disagreed, while 21.92% were undecided that Network is the major factor hinders the adoption mobile banking service by the bank customers. Hence, the majority respondents imply that Network is not the major factor hinder the adoption mobile banking service by the individuals. Finally 12.70% of the respondents disagree, 12.30 undecided, while 75.00% agree that Mobile banking helps customer in attaining personal satisfaction. Hence majority of the respondents assumed that Mobile banking helps customer in attaining personal satisfaction.

Table III: Distribution of Responses on Mobile Banking Influence on Service Delivery of Nigeria Money Deposit Banks

Questions	SA	A	D	SD	U	Total
Introduction of e banking service product has increase the strength customer system in terms of financial service patronage	145 (55.77)	55 (21.15)	20 (7.69)	24 (9.23)	26 (6.15)	260 (100)
The introduction of electronic payment products such as m-banking, ATM, internet has increased the level of economic activities	150 (57.69)	70 (26.92)	10 (3.85)	15 (5.77)	15 (5.77)	260 (100)
Mobile banking improve customer loyalty	86 (33.08)	109 (41.92)	8 (3.08)	17 (6.54)	40 (15.38)	260 (100)
Mobile banking positively influence the service rendered by the Nigeria money deposit banks	76 (29.23)	128 (49.23)	25 (9.62)	16 (6.15)	15 (5.77)	260 (100)
Infrastructure deficiency such as critic power supply and communication link are challenging facing mobile banking service	86 (33.08)	109 (41.92)	5 (1.92)	20 (7.69)	40 (15.38)	260 (100)
There is significant relationship between mobile banking and service delivery of the Nigeria money deposit banks	128 (49.23)	62 (23.85)	18 (6.92)	16 (26.15)	36 (13.85)	260 (100)
Mobile banking has no negative effect on the performance of Nigeria money deposit banks	19 (7.31)	31 (11.92)	120 (46.15)	80 (30.77)	10 (3.85)	260 (100)
mobile banking does not positively influence service delivery of commercial banks in Nigeria	10 (3.85)	10 (3.85)	163 (62.69)	48 (18.46)	29 (11.15)	260 (100)
Network is the major factor hinder the adoption mobile banking service by the individuals	13 (5.00)	12 (4.62)	170 (65.38)	8 (3.08)	57 (21.92)	260 (100)
Mobile banking helps customer in attaining personal satisfaction	95 (36.54)	100 (38.46)	10 (3.85)	23 (8.85)	32 (12.30)	125 (100)

Note: the bracket Figures indicate the percentage & figure not bracket indicate the frequency
Source: Computations and Output of STATA10 based on Authors' Field Survey (2013).

TEST OF HYPOTHESIS

H₀: Mobile banking has no significant influence on service delivery of Nigeria money deposit banks.

The model undertakes an investigation into the influence of mobile banking on service delivery of Nigeria money deposit banks. Findings were presented in table IV below. According to the result presented in table IV (a) and (b), a unit increase in questions 1, 3, 6 and 7 responses over the study period resulted in a 5.41666667 per cent, 11.31111111 percent, 2.01617647 percent and 1.71915375 per cent increase on the influence of mobile banking on the service delivery by the Nigeria money deposit banks respectively. Furthermore in table V (b) the result of Breusch-Fagan/Cook-Weisberg test for Heteroskedasticity result support that the model is significant since the Prob>Chi2 is 0.0001 with Chi2 (4) =23.61. Individually, the questions are statistically significant since their Prob>F 0.0000 with F-value 26.21, 72.98, 9.76 and 8.32 respectively. Collectively the statistical properties of the model indicate that the model is statistically significant since Prob>F is 0.0000 with F-value 367.51.

Due to the observed level of significance and mobile banking influence on service delivery by Nigeria money deposit banks through questions tested which make all the figures to be statistically significant with the probability of F = 0.0000 we reject null hypothesis stated earlier that Mobile banking has no significant influence on service delivery of Nigeria money deposit banks. It was concluded that investment in Mobile banking by the Nigeria money deposit banks will significantly improve their performance in term of service delivery.

Table IVa: Analysis of Variance Result for Mobile Banking Influence on Service Delivery of Nigeria Money Deposit Banks.

Number of obs = 260, R-squared = 0.9576
 Root MSE = .259982, Adj R-squared = 0.9550

SOURCE	PARTIAL/SS	DF	MS	F VALUE	Prob>F
Model	2.84.794444	15	18.9862963	367.51	0.0000
Q1	5.41666667	4	1.35416667	26.21	0.0000
Q3	11.31111111	3	3.77037037	72.98	0.0000
Q6	2.01617647	4	.504044118	9.76	0.0000
Q7	1.71915375	4	.429788437	8.32	0.0000
Residual	12.6055556	244	.51662113		
Total	297.4	259	1.14826255		

Source: Computations and Out-Put of STATA 10 based on Author’s Field Survey (2013)

Table IVb: Heteroskedasticity Test

Breusch-Pagan / Cook-Weisberg test for Heteroskedasticity

Ho: Constant variance

Variables: Q1 Q3 Q6 Q7

chi2(4)	23.61
Prob> chi2	0.0001

Source: Computations and Out-Put of STATA 10 based on Author’s Field Survey (2013)

CONCLUSION AND RECOMMENDATION

This study concludes that there is significant relationship between mobile banking and service delivery of the Nigeria money deposit banks. The result of hypothesis tested showed that mobile banking has a positive influence on the performance of Nigeria money deposit banks through service delivery and also influence the level of economic activities. In view of the above finding the following recommendation were made:

- Investment in Mobile technology should form an important component in the overall strategy of NMDBs operators to ensure effective performance.
- The bank management should provide adequate Mobile banking service technology and proper training should be given to the employee in other to meet the quality of service needed by the customers.
- Customers' interest and orientation should be seen as ultimate in the implementation of this machinery especially in the usage of the devices.

REFERENCES

Aker, Jenny C. 2010. “Information from Markets Near and Far: Mobile Phones and Agricultural Markets in Niger.” *American Economic Journal: Applied Economics*, 2(3): 46-59.

Amin, H., M. R. A. Hamid, S. Lada, and Z. Anis, “The Adoption of Mobile Banking in Malaysia: The Case of Bank Islam Malaysia Berhad,” *International Journal of Business and Society*, Vol.9, No. 2:43-53, 2008.

Blake. M., (2004). Growing Mobile Market in Africa. *The Electronic Library* 22 (4), p.370. Communication in Nigeria: A Breakthrough in Interactional Enhancement or a Drawback? *Nordic Journal of African Studies* 14(2): 193 – 207 (2005) Thesis. University of Ibadan, Nigeria.

Central Bank of Nigeria (2003), Report of the Technical Committee on Electronic Banking. Central Bank of Nigeria (CBN) Report, 2012.

CGAP, (2010) "Microfinance and Mobile Banking: The Story So Far", Focus Note No. 62, July 2010.

Chang, H.H. and Wong, K.H. (2010) Adoption of E-procurement and Participation of E-Marketplace on Firm Performance: Trust as a Moderator, *Information & Management*, 47, 5, 262-270.

Cheng, and Yeung (2006) Adoption of Internet Banking: An Empirical Study in Hong Kong, *Decision Support Systems*, 42, 3, 1558-1572.

Garbarino, E. and M. Strahilevitz, "Gender Differences in the Perceived Risk of Buying Online and the Effects of Receiving a Site Recommendation," *Journal of Business Research*, Vol. 57, No. 7: 768-775, 2004.

Goyal S, Thakur KS (2008). A Study of Customer Satisfaction Public and Private Sector Banks of India Punjab, *J. Bus. Stud.*, 3(2): 121-127.

ITU (2009) *Telecommunication/ICT Market Trends in Africa 2007*. http://www.itu.int/ITU-D/ict/statistics/material/af_report07.pdf.

Lai and Li (2005) Technology Acceptance Model for Internet Banking: An Invariance Analysis, *Information & Management*, 42, 2, 373-386.

Lee and Kim (2009), "Understanding Dynamics Between Initial Trust and Usage Intentions of Mobile Banking," *Information Systems Journal*, vol. 19, no. 3, pp. 283-311, 2009.

Lewin, D., and Sweet, S. (2005). The Economic Impact of Mobile Services in Latin America. GSM Association, December, pp 47-49.

Lu, J., C. S. Yu, and C. Liu, "Mobile data Service Demographics in Urban China," *The Journal of Computer Information Systems*, Vol. 50, No. 2: 117-126, 2009.

Luarn, P. and H. H. Lin, "Toward an Understanding of the Behavioral Intention to Use Mobile Banking," *Computers I Human Behavior*, Vol. 21: 873-891, 2005.

Natarajan, T., S. A. Balasubmanian, and S. Manickavasagam, Customer's Choice Amongst Self Service Technology (SST) Channels in Retail Banking: A Study Using Analytical Hierarchy Process (AHP)," *Journal of Internet Banking and Commerce*, Vol. 15, No. 2: 1-16, 2010.

- Nigerian Businessinfo.com (2012). Revisiting Nigeria's Telecommunications Industry. Available at: <http://www.nigriabusinessinfo.com/telecoms080903.htm> Accessed on 12/02/12.
- Parasuraman A., Zeithaml, V. & Berry, L. (2002), 'Service Quality Delivery through Web Sites: A Critical Review of Extant Knowledge', *Journal of the Academy of Marketing Science*, Fall 2002; vol. 30. No. 4 pp 362-375.
- Parasuraman A., Zeithaml, V. & Berry, L. (1988), 'A Conceptual Model of SQ and Its Implications for Future Research' *Journal of Marketing*, vol. 49. Fall, pp 41-50.
- S. Laforet, X. Li, (2005) "Consumers' Attitudes Towards Online and Mobile Banking in China", *International Journal of Bank Marketing*, vol. 23, no. 5, 2005, pp. 362-380.
- Saleem and Rashid (2011), Relationship between Customer Satisfaction and Mobile Banking Adoption in Pakistan, *International Journal of Trade, Economics and Finance*, Vol. 2, No.6, December 2011.
- Sungard Financial System (2013), Financial Data System, A Common Wealth of Market. www.marketwiki.com.../sungard_data.
- Tiwari, R. and Buse, S. (2007), *The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in the Banking Sector*. Hamburg, Germany: Hamburg University Press.
- UNCTAD (2007), *Science and Technology for Development: A New Paradigm for ICT, Information Economy Report*, New York.
- Yang, Z. (2001), 'Consumer Perceptions of Service Quality in Internet-Based Electronic Commerce' *Proceedings of the 30th EMAC Conference*, 8-11 May, Bergen.
- Zhu, et al., (2005), Post-Adoption Variations in Usage and Value of E-Business by Organizations: Cross-Country Evidence from the Retail Industry, *Information Systems Research* 16, 61- 84.

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