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Electronic Banking and Customer Satisfaction in the Nigerian Banking Sector

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Abstract:

Purpose – The purpose of this research study is to investigate Electronic Banking and its relationship with customer satisfaction in Nigeria.

Design/methodology/approach – The design adopted for this research study was the quantitative (descriptive) research design. A survey approach was used to collect data from 420 respondents selected as participants for the research study. The research study utilized a questionnaire as the main data collection instrument. The questionnaires were distributed to the respondents using a Convenience sampling technique. Statistical tools used in the study are Frequency/Percentage analysis, Cronbach's alpha reliability test, Friedman's test, Kruskal-Wallis test, and Chi-square goodness of fit test. The researcher also reviewed similar and related past research works in the study.

Findings – The results revealed that most customers in Nigeria had preference for Automated Teller Machine (ATM) and Internet Banking. The findings also shows that the major challenges with e-banking in Nigeria were insufficient e-banking infrastructures for public use, and unavailability of the e-banking channels due to power failure, network downtime, and system failure. The results of the study also revealed that there was a significant relationship between e-banking and customer satisfaction; and e-banking has increased customers' satisfaction in Nigeria.

Practical implications – The adoption and utilization of e-banking alone cannot guarantee improvement in customers' satisfaction without Banks and customers looking critically into the factors that influence customers' adoption of e-banking products while also considering the benefits of e-banking products.

Originality/value– This research study presents quantitative findings from a survey conducted to determine the relationship between e-banking and customer satisfaction, and if e-banking has improved customers satisfaction in Nigeria.

Keywords: e-banking, adoption, utilization, customer satisfaction, ATM, Internet Banking

1. Introduction

The economies of most underdeveloped and developing countries in the world today are cash driven. This implies that financial and banking transactions are basically carried out through the use of bank notes. However, this trend as a result of rapid developments in Information Technology has given way to more robust ways of carrying out transactions through the use of intelligent electronic and digital systems (Ozuru et al., 2010). In developed economies such as the U.S., U.K., Germany, and France, most financial and banking transactions are carried out using modern electronic intelligent systems and software that have been programmed to perform different financial and banking tasks on their own independent of bank Tellers (Elisha, 2010; Ozuru et al. 2010). The Nigerian banking sector is not an exception to these changes in the way financial and banking transactions are done globally; it has also witnessed tremendous changes in the way financial and banking transactions are carried by commercial banks' customers in Nigeria (Balogun et al., 2013). These changes are as a result of the rapid developments in Information Technology infrastructures over the years (Adewuyi, 2011; Fozia, 2013). The utilization of modern and sophisticated Information Technology systems and platforms for carrying out banking transactions, and payment for goods and services is what is referred to as "Electronic Banking" or e-banking for short (Adewuyi, 2011; Fozia, 2013). These changes in the way financial and banking transactions are carried out using e-banking platforms has a lot of merits and challenges to the commercial banks, customers, and regulatory authorities (Adewuyi, 2011).

Commercial banks play a very vital role in the economic development and growth of any Nation due to the fact that they are statutorily empowered to provide financial and banking services to individuals and corporate bodies. The importance of commercial banks can never be over emphasized as they also provide other non-financial services to the public such as safe keeping of valuables

(Adewuyi, 2011). Over the years, increased competition, advancement in Information Technology, and globalization has led to the development of different e-payment (e-banking) solutions ranging from mobile /telephone banking to the POS services (Foza, 2013). As cited by Ahmad et al. (2011), "Electronic Banking" is one of the most recent channels of performing banking transactions or financial services. They stated that electronic banking was first introduced into the banking industry in the mid 1990s and has steadily become very significant in the industry. They view e-banking as a channel in which banks make banking information or services available to their customers via a computer or a digital device, and that a robust e-banking service is one that gives customers the opportunity to have access to their accounts and carry out banking transactions or one that allows customers to purchase and make payment of goods and services online through the use of the internet.

Shannak (2013) stated that in America, modern e-banking first started in New York in the early 1980s and was offered by Citibank and chase Manhattan. The United Kingdom adopted it in 1983; the Bank of Scotland being the first to adopt and implement it (Shannak, 2013). During that period, a computer terminal, monitor, and a dial-up telephone line were the only hardware required to implement e-banking (Shannak, 2013). Another method of carrying out e-banking during that period was through the use of numeric keypads on a telephone which enabled customers to send messages to the banks via telephone (Shannak, 2013). Shannak (2013) also stated that other e-banking services available during the period were viewing of account statements, and online payments of utility bills. Although, e-banking services available during that period did not provide full banking transaction services, but it however paved way for more robust and user-friendly e-banking services that are available to customers today (Shannak, 2013).

These e-banking services have been adopted and utilized by most commercial bank customers today because of the ease of carrying out monetary transactions as well as payments for goods and services. The type of e-banking solution or service adopted and utilized by a customer of any commercial bank however can have some influence or relationship on the customer's satisfaction level with the services provided by the bank. Commercial banks whose e-banking services are robust, effective and efficient coupled with delivering superior quality services to customers tend to attract more customers than commercial banks that are unable to provide robust, effective and efficient e-banking services (Adewuyi, 2011; Ahmad et al., 2011). Ojokuku et al., (2012) also stated that customer satisfaction with a bank's products or services is very important because it has a significant impact on the bank's performance and is considered to be an important factor in increasing the competitiveness of the firm. Ogunlowore, et al., (2014) posit that recent consolidation of commercial banks in Nigeria has made many banks to increase their drive and demand for various IT infrastructures which helps in improving customer service delivery, which in the long run translates into increased customer satisfaction and increased profit (Ogunlowore et al., 2014).

1.1. Historical Development of the Nigerian Banking System

Banking in Nigeria can be traced back to the period between 1892 and 1894 when the African Banking Corporation (ABC) and the Bank of British West Africa (BBWA) were first established (Onoja, 1998; Donwa et al., 2011). Another bank, the Anglo-African Bank was later established in 1902, and in 1916, a British colonial bank was established, which was later called Barclays Bank DCO in 1925 (Uche, 1999). The Anglo-African Bank was later changed to Bank of Nigeria in 1902, while the BBWA later in 1957 became known as Bank of West Africa (BWA) to reflect the regional identity of the bank (Donwa et al., 2011; Adekanye, 2010). In 1966, the bank adopted the name Standard Bank of West Africa following its merger with Standard Bank, UK (Donwa et al., 2011; Nwagwu, 2007). In 1969, the bank was incorporated locally as Standard Bank of Nigeria Limited, and was eventually changed to First Bank of Nigeria in 1979 (Adekanye, 2010; Nwagwu, 2007). Banking in Nigeria began with the establishment of some indigenous banks - National Bank of Nigeria in 1933, Agbonmagbe Bank in 1945, and the African Development Bank (ADB) in 1948 (Onuorah et al., 2012). In 1948, another expatriate bank, the British and French Bank was established (Donwa et al., 2011; Sklar, 2004). The name of the bank was later changed to United Bank for Africa (UBA) (Sklar, 2004). There was this belief that most of the existing banks then did not meet the needs of Africans, and were discriminatory against Africans (Sklar, 2004); this led to the establishment of an indigenous Nigerian bank by Dr. Nnamdi Azikiwe in 1949 known as the African Continental Bank (Sklar, 2004). This was followed by the establishment of the Merchant Bank in 1952 (Donwa et al., 2011). During that era, other non-banking financial institutions that provided related financial services were also in existence. Some of these institutions at that time were: the Post Office Savings Bank, Lagos Building Society (which later became the Federal Mortgage Bank of Nigeria), Federal and Regional Loans Boards, Co-operative Societies and other thrift institutions (Donwa et al., 2011).

The period between 1892 and 1952 was the free banking period. During this period, there was rapid establishment of indigenous banks and most of them collapsed due to gross undercapitalization, bad management, and the absence of banking legislation to guide their operations (Nwankwo, 1990; Ovuakporie, 1994).

A commission headed by G.D. Paton was later set up to look into the issue (Muhammad, 2015; Alford, 2010). The commission known as the G.D. Paton commission (Muhammad, 2015; Alford, 2010) acted swiftly and recommended the need for a minimum capital base requirement and bank ordinance for banks operating in the country. During the period of 1952-1958, the Banking Ordinance of 1952 was put into operation. The Ordinance provided for licensing requirements, procedures, standards for banking business, prudential guidelines and supervision. By 1955 when the Ordinance became operational, most of the banks that could not meet up with the requirements had collapsed except Agbonmagbe Bank, ACB and Merchant Bank (Donwa et al., 2011). These banks survived because they were getting financial support from the then Western and Eastern Regional Governments of Nigeria (Donwa et al., 2011). The National Bank of Nigeria also supported and sponsored these banks too; and these were the only banks that survived the banking boom of the late 1940s and early 1950s (Donwa et al., 2011). The banking ordinance which had prevented undercapitalized banks from operating could not really put a check on the malpractices that were going on in the banks that were operating at that time (Donwa et al., 2011). It was also unable to further develop the banking system (Donwa et al., 2011). Also, the ordinance did not

provide for indigenous banks a reserve financial institution where they can fall back to in times of liquidity crisis (Donwa et al., 2011). These short comings and inadequacies, among other things led to the enactment of the Central Bank of Nigeria (CBN) Act in 1958 and to the subsequent establishment of the regulatory bank in 1959. The CBN was then charged and empowered with the functions of promoting and developing the financial market, the bankers' bank, issuing and distribution of currencies, promotion of special schemes, and provision of funds for industrial development. The CBN also had the responsibility of supervising finance houses (Muhammad, 2015; Donwa et al., 2011). The CBN officially commenced operations on the 1st of July, 1959. In 1991, the CBN Act 1958 was replaced by the CBN Act No.24 of 1991. The period from 1960 to 1986 witnessed the enactment of various CBN Acts, emergence of the securities markets and instruments, and several other development policies of the financial and non-financial sector in Nigeria. In 1968, a decree known as the Companies Decree was enacted, and this was followed by the Banking Act of 1969 (Muhammad, 2015; Adekanye, 2010). The Banking Act 1969 apart from making adjustment on the capital base requirements for banks also made provision for capital deposit ratio. The Act also increased the capital-loan ratio of banks, and puts the CBN supervisory function under the Nigerian finance ministry (Muhammad, 2015; Donwa et al., 2011).

In 1988, the Nigerian Deposit Insurance Corporation (NDIC) was established by an Act, Act No.22 of 1988. The NDIC was to function as an additional regulatory agency that will assist the CBN in ensuring safety, soundness and confidence in the banking sector. The NDIC's aim was to help sanitize the banking sector by reducing the rate at which commercial banks run into liquidity crises (Donwa et al., 2011). The NDIC specifically mandated banks to make adequate provisions for loan losses arising from bad debts. The Banks and Other Financial Institutions Act (BOFIA) No. 25 of 1991 also placed on the CBN the sole authority of licensing banks, determining their maximum capital requirements, and had the power to sanction any bank that fails to comply with the provisions of the Act. This was done because of the failure of the ordinary courts to handle the numerous criminal and debt recovery cases arising from the crisis experienced by many banks in the 1990s (Donwa et al., 2011). Another Decree, the Failed Bank Decree No.22 was promulgated in 1994. This Decree was to help recover debts owed to failed banks as well as punish erring bank officials who aid and engage in financial crimes (Donwa et al., 2011).

In 1995, another Decree, the Nigerian Investment Promotion Decree was promulgated. The Decree further deregulated investments in the capital market and also permitted foreigners to invest in any sector of the Nigerian economy. The Odife Panel of 1996 which reviewed the Nigerian capital market was able to make significant reforms in the capital market through some of its recommendations, most importantly the enactment of the Investment and Securities Act of 1999 (Osaze, 2000).

In 2004, the CBN under the leadership of Professor Charles Soludo as the banks governor was able to carry out banking reforms and consolidation. The reform was to bring significant transformation to the banking industry in Nigeria. The reform was introduced by the CBN on the 6th of July, 2004. Prior to this period, the Nigeria banking industry consisted of 89 banks, with most of them being weakly capitalized. Most of the banks then had less than Ten Million Dollars as paid in capital. Most of these banks were family-owned and privately managed. In line with the reforms and consolidation, the CBN increased the capital base for commercial banks from Two Billion Naira to Twenty-five Billion Naira (Sanusi, 2012). The CBN's reason for increasing the capital base was that the Two Billion Naira commercial bank capital base had become grossly inadequate to meet the emerging domestic and global realities in the new financial system. The CBN's main intent for the consolidation was to consolidate the existing 89 banks into fewer financially stronger and stable banks (Sanusi, 2012; Donwa et al., 2011). With this, commercial banks operating within the borders of Nigeria were mandated to meet with the requirement of this new capital base by 31st December, 2005 or be considered as unfit to operate as a commercial bank in Nigeria (Donwa et al., 2011). Only 25 out of the existing banks were able to meet the N25 Billion recapitalization (Sanusi, 2012; Donwa et al., 2011). Most of the banks that were unable to meet up with the requirement of the new capital base had to either merge with other banks to remain in the banking business, while others were acquired by bigger banks. Those that could not merge or be acquired were forced to close shop. 13 of these 89 banks were unable to meet up the capital base requirement, and could neither merge nor be acquired by other banks. These banks had their operating licenses revoked by the CBN (Sanusi, 2012; Alford, 2011).

In 2009, the new governor of the CBN, Sanusi Lamido empanelled a joint committee of the CBN and NDIC to carry out a critical examination and audit of the existing 24 banks then (Alford, 2011). The first phase of the job was carried out by examining 10 banks (Alford, 2011). The results of the examination revealed that 5 of these banks were insolvent (Alford, 2011). The affected banks were: Oceanic Bank, Union Bank, AfriBank, FinBank, and Intercontinental Bank. To improve the liquidity of the banks, the CBN had to inject into them 420 billion Naira, (approximately 2.8 billion Dollars) in the form of subordinated loan. Also some of the Executives of these insolvent banks were charged with financial crimes while new Chief Executive Officers were appointed by the CBN (Alford, 2011). Auditing and examination were subsequently carried out on the remaining 14 Nigerian banks, and 3 other banks were found to be insolvent. These banks were: Bank PHB, Spring Bank, and Equatorial Trust Bank. Following this, the Chief Executive Officers of these insolvent banks were dismissed, while the CBN injected N200 Billion into the banks to rescue them. The CBN also appointed new Chief Executive Officers for the rescued banks (Alford, 2011).

Moreover, the CBN mandated all commercial banks to change their financial year ends to the normal calendar year, because different financial year ends as been practiced then made financial comparison among the banks difficult and limited the transparency of banks financial results. This was also going to enhance the level playing ground for commercial banks (Alford, 2011).

1.2. Historical Review of E-Banking in Nigeria

The introduction and implementation of Structural Adjustment Programme (SAP) initiated in 1986 by the then President of Nigeria, General Ibrahim Babangida brought a shift in the way banking services were carried out by the first generation of commercial banks in Nigeria. The way these first generation of commercial banks carried out operations and carried out transactions was regarded as "Arm Chair

Banking". The introduction and implementation of SAP did not only change the structure of banking transactions, but it also changed the content. As the number of commercial banks in the country increased from 40 to 125 between 1985 and 1991, the SAP made it possible for more commercial banks to be introduced and licensed, which also became a threat to the already existing ones. This threat sparked up competition among the banks and resulted in aggressiveness in the quest for robust ways of carrying out banking transactions and marketing of these new robust methods by commercial banks in Nigeria. As a result of this intense competition among the existing banks, the acceptance, adoption, and utilization of electronic banking by commercial banks was viewed as a necessary tool for maintaining a good competitive position. E-banking technology entered the British Banking system in the late 1960s, whereas, in Nigeria, it began in the year 1990 when Societe Generale Bank (SGBN) launched the first Automated Teller Machine (ATM) in Nigeria (Adewuyi, 2011). In 1996, the CBN granted All States Trust Bank approval to introduce a closed system electronic purse called ESCA. This was followed in February 1997 with the introduction of a similar product called 'Paycard' by Diamond Bank (Bello, 2005). Another card based e-money was in February 1998 given the authorization of Smartcard Nigeria Plc (a company floated by a consortium of 19 banks to produce and manage cards called valucard which are issued by the member banks) to start as an open platform (Bello, 2005). Between 1998 and 2000, many banks in Nigeria launched their personal websites with a view to starting Internet banking (Bello, 2005). Another consortium of more than 20 banks under the auspices of Gemcard Nigeria Limited obtained CBN approval in November 1999 to introduce the 'Smartpay' scheme (Bello, 2005).

Since the introduction of modern e-banking services, other channels of online e-banking services such as mobile banking, internet banking, Automated Teller Machine (ATM), and Point of Sale terminals (POS) have been developed and offered by most banks around the globe (Puopiel, 2014).

1.3. Statement of the Problem

The rapid development and advancement in Information Technology infrastructures such as the Internet and telecommunications systems has enabled the development of various e-banking products/platforms that are used for financial and banking transactions around the globe (Fozia, 2013). Global connectivity has been made possible through the utilization of the internet which is now seen as an inevitable business tool (Fozia, 2013). These changes in the way banking transactions are carried out as a result of advancement in IT infrastructures and the emergence of internet have given rise to development of a kind of economy that is globally referred to as the 'digital economy' (Fozia, 2013). This 'digital economy' has brought about rapid changes in the way customers carry out banking transactions, and in the way they do their businesses using different e-banking delivery channels (Fozia, 2013). Also, as a result of the emergence of the 'digital economy', the way banking services are done seems to be shifting from the banks' Tellers offering services to customers to customers carrying out their transactions independently on their own (Elisha, 2010; Fozia, 2013). Customers are also increasingly demanding more value for their transactions, with goods and services customized to meet their exact needs at minimum cost, and as fast as possible (Fozia, 2013). For commercial banks to meet these demands of their customers, they need to develop robust ways for customers to do their businesses and financial transactions using IT infrastructures and internet (Fozia, 2013). Developments in Information Technology have helped in providing powerful IT software and hardware that can store large quantity of information/data, retrieve information/data, process, transmit data, and carry out financial transactions within the shortest span of time (Fozia, 2013). With the introduction of the Internet and the World Wide Web, most banks customers now see e-banking as a veritable tool to carry out their businesses and banking transactions effectively and efficiently (Fozia, 2013). As banking services in Nigerian continue to be electronically driven as a result of developments of new e-banking facilities and infrastructures, they are also posed with challenges in recent times that have hindered the successful utilization of the e-banking channels for transactions by customers. There have been persistent complaints from customers about the available e-banking services which have forced some customers to discontinue the usage of some of these e-banking services. Some customers have complained of inaccessibility of the e-banking products, network fluctuation problems, lack of user-friendly applications and sometimes loss of money electronically. These are the major challenges militating against the utilization of e-banking services in Nigeria. More worrisome are the issues of unavailability and inaccessibility of these e-banking services to customers who reside in areas that are not connected to the internet. Some banks make available a variety of e-banking solutions with good network services while others still provide poor and inadequate e-banking services to their customers probably because the managements of these banks do not give high priority to modern IT infrastructures and e-banking services; hence the slowness in adopting and integrating e-banking services into their traditional core banking services. The unavailability of these e-banking services to customers as well as the inaccessibility of these e-banking services by customers' lead to customers' dissatisfaction with the e-banking product, and in some cases it has affected customers' preferences for these products (Gbadeyan et al., 2011).

Commercial banks in Nigeria have decided to adopt and implement electronic-banking for many beneficial reasons such as; to improve service delivery to customers, reduce long queues in the banking hall, enable customers to carry out banking transaction around the clock such as withdrawal of cash and cash transfer to third party accounts, payment for goods and services at international level, payment of utility bills, tracking of personal banking transactions, checking of account balance, and request for online banking statements (Ogunlowore et al., 2014). One of the benefits banks get from the utilization of e-banking products for service delivery is enhanced efficiency and efficacy of banking operations which gives room for volumes of transactions to be processed faster, accurately, and conveniently, which will ultimately have a drastic impact on the overall performance of the banks (Edojariogba, 2014). Customers on the other hand tend to have the benefit of speedy service delivery, abridged rate of going to banks to carry out transactions, and abridged rate of carrying physical cash to make payment for goods and services, which gives ascend to higher rate of profit for the banks (Edojariogba, 2014). Nevertheless, these developments in the Nigerian banking sector appear not to have been achieved, because long queues can still be observed in the banking halls of banks, customers still carry heavy cash around to effect

payment for goods and services, while various electronic banking products and channels are available for them to carry out cashless transactions with ease (Edojariogba, 2014). In spite of efforts of commercial banks to ensure that their customers reap the benefits of utilizing e-banking services for transactions, they are often met with complaints from customers through the Customer Care/Services Units and Account Officers on issues such as the malfunctioning of ATMs, network downtime, online theft and fraud, non-availability of the financial institutions, payment of hidden charges for utilization of electronic banking channels, non-acceptability of Nigerian cards for international transaction among others (Ogunlowore, et al., 2014).

This research study is aimed at evaluating e-banking channels available in the commercial banking sector of Nigeria as well as evaluation of customers' preferences for these e-banking products (Edojariogba, 2014). The research study will also attend to the following questions: What are the available e-banking services/channels in the Nigerian banking sector? What factors influence customer's propensity to use e-banking services/channels for financial transactions? Does the use of e-banking services/channels have effect on customers' satisfaction level? Have the e-banking products improved the satisfaction levels of customers? What are the major challenges of using e-banking services/channels in Nigeria? What are some of the measures for countering or minimizing these challenges?

1.4. Research Questions

In trying to establish the relationship between e-banking and customer satisfaction, the following research questions are crucial:

1. Available e-banking services/channels in Nigeria: This research question attempts to find out the existing and available e-banking services/channels available to customers of commercial banks in Nigeria. This question tries to identify the existing e-banking services/channels available to customers, their functions/how they are implemented, and their benefits to customers.
2. Customers Relation to e-banking in Nigeria: This research question attempts to identify some of the factors that influence a customer's propensity to adopt and utilize a particular e-banking service/channel. The question also tries to find out the most preferred e-banking channel by customers and if there is any significant differences in customers preferences for the electronic products, as well as to find out if customers' preferences for e-banking products are influenced by educational level and gender.
3. Customers' Satisfaction with e-banking services/channels in Nigeria: This research question attempts to establish if there is a relationship between utilization of e-banking products and customer satisfaction. The question also tries to know if utilization of e-banking products has significantly improved the satisfaction levels of commercial banks customers in Nigeria. This research question also tries to find out some of the challenges militating against the effective and efficient use of e-banking products, as well as suggested measures that can be used to counter or minimize these challenges to the effective and effective utilization of e-banking products in Nigeria

1.5. Aim and Objectives

The aim of this research study is to evaluate available e-banking services/channels in Nigeria, and to find out factors that influence customers' adoption and utilization of e-banking products, as well as determine if e-banking has improved customer satisfaction.

The objectives of the research study are as follows:

1. To determine available e-banking channels in Nigeria.
2. To determine and evaluate factors that influence customers' adoption and utilization of e-banking services/channels in Nigeria.
3. To evaluate and determine customers most preferred e-banking services/channels; and to also determine if there is a significant difference in customers' preferences for e-banking services/channels.
4. To determine if there is a significant difference in customers' preferences for e-banking channels across different educational levels and gender.
5. To determine if there is a significant relationship between utilization of e-banking services/channels and customers' satisfaction.
6. To determine if utilization of e-banking services/channels have significantly improved customers' satisfaction.
7. To identify some of the major challenges militating against the effective utilization of e-banking services/channels in Nigeria.
8. To suggest measures and solutions that can be used to counter or minimize some of the challenges of e-banking in Nigeria.

1.6. Research Hypotheses

The following null hypotheses will be tested for statistical significance in this research study:

- H01: "There is no statistical significant difference in customers' preferences for e-banking channels".
- H02: "There is no statistical significant difference in customers' preferences for e-banking channels across different educational levels".
- H03: "There is no statistical significant difference in customers' preferences for e-banking channels based on gender difference".
- H04: "There is no statistical significant relationship between utilization of e-banking channels and customer satisfaction".
- H05: "Utilization of e-banking channels has not significantly improved customers' satisfaction".

1.7. Scope of the Research Study

This research study is with reference to the Nigerian banking industry. The study attempts to evaluate customers' satisfaction with respect to available e-banking services/channels in Nigerian commercial banks. The scope of the study covers the twenty one (21) commercial banks approved by the Central Bank of Nigeria (CBN) and operating within the borders of Nigeria. The research study tries to get views and opinions from all categories of customers who utilize one or more e-banking services/channels in carrying out banking transactions. Customer in this context refers to a holder of individual or corporate account with any of the commercial banks in Nigeria. The study also attempts to determine the level of customers' awareness of the e-banking products as well as their preferences for these products. The researcher will critically examine views and opinions of selected customers from the 21 approved commercial banks in Nigeria.

According to www.cenbank.org (Retrieved on the 14/02/2015, 17:45pm), the Central Bank of Nigeria (CBN) has the following banks as approved/licensed commercial banks in Nigeria:

- Access Bank Plc
- Citibank Nigeria Limited
- Diamond Bank Plc
- Eco Bank Nigeria Plc
- Enterprise Bank Limited
- Fidelity Bank Plc
- First Bank of Nigeria Plc
- First City Monument Bank Plc
- Guaranty Trust Bank Plc
- Heritage Bank Plc
- Keystone Bank Limited
- Mainstreet Bank Plc
- Skye Bank Plc
- Stanbic IBTC Bank Nigeria Limited
- Standard Chartered Bank Plc
- Sterling Bank Plc
- Union Bank of Nigeria Plc
- United Bank for Africa Plc
- Unity Bank Plc
- Wema Bank Plc
- Zenith Bank Plc

1.8. Significance of the Research Study

The significance of this research study lies in the fact that e-banking channels are very robust channels in which bank customers independently carry out banking transactions on their own without the direct attendance and support of the bank Tellers (Elisha, 2010; Edojariogba, 2014). Furthermore, it is an established fact that customers' satisfactions with these e-banking channels play a vital role in determining the operational success of these commercial banks in Nigeria (Balogun et al., 2013; Edojariogba, 2014).

The research will help to highlight the importance of the e-banking channels that are believed to encourage customers towards having high levels of satisfaction transacting with the commercial banks. The findings of this research study will provide vital information to policy makers in the Nigerian commercial banking sector of better ways of increasing customers' satisfaction in commercial banks.

Furthermore, the research study will help broaden the knowledge of other researchers who intend to carry out similar research works on the subject matter, and thereby empower and increase their capabilities. In addition, the research study will help appraisal managers in commercial banks who intend to conduct periodic customers' satisfaction evaluation exercises to identify customers' expectations, challenges and prospects in order to increase their satisfaction levels with the e-banking services. The study will also help managers who conduct customers' satisfaction surveys in commercial banks to determine key factors and challenges that affect customers' satisfaction and how to eliminate or minimize the negative effects of these challenges.

1.9. Researcher's Brief Profile

I am forty nine years of age and hold a BSc Accounting, upper division, Masters of Business Administration (MBA) and an MSc Management from the University of Port Harcourt, University of Benin in Nigeria and University of South Wales United Kingdom respectively. Professionally, I am a Fellow of the Nigerian Institute of Management (Chartered), Fellow of Institute of Certified Public Accountants of Nigeria (FCPA) and Institute of Credit Administration (FICA). I am a Chartered Fellow of Chartered Management Institute, United Kingdom (CMgrFCMI-UK), an Associate member of the International Academy of Retail Banking (AIRB), United Kingdom, a member of The Institute of Chartered Accountants of Nigeria (ICAN) and The Chartered Institute of Bankers of Nigeria (CIBN).

Most importantly, I hold twenty six years post graduate experience spread across Manufacturing, Construction, Accounting, Finance and Banking. In 1993, after having a stint with Akintola Williams Deloitte (Chartered Accountants) and **Honeywell Group** as an

Internal Auditor, I joined OCEANIC BANK INT'L PLC (now Ecobank Nigeria Limited) where I work to date. I have had so far a distinguished management career of over twenty two years with Ecobank Nigeria Ltd Nigeria.

My experience in Banking has witnessed massive material and human management. This involves appropriate leadership and direction of staff for the attainment of the Bank's corporate goal of being a world class Pan African Bank that will provide comprehensive wholesale and retail products and services including E-banking services to our customers. As a Bank Manager, I have under my supervision thirty one staff who report through their unit heads of operations, Information and Technology, Cash and Teller, Funds transfer, Credit & marketing, logistic and Security.

I strongly believe that carrying out this study will convincingly provide a deeper understanding of E-Banking services in Nigeria so far.

1.10. Research Limitations

The researcher carried out the research study using customers of only commercial banks operating in the Delta state of Nigeria; which is just a subset of the entire commercial banks operating in Nigeria. The total number of customers was difficult to get as a result of the fact that the population is infinite. This made it difficult for the researcher to get a comprehensive sampling frame to use for the research. This also made it difficult for the researcher to scientifically determine the required and ideal sample size to use in the research study. The unavailability of a comprehensive sampling frame also made it impossible for a probability sampling technique to be used in the research study, which would have given a higher precision and reliability for the research results to be generalized.

2. Literature Review

2.1. Introduction

As described by Chavan (2013), e-banking is the provision of banking products and services to banks and customers through the utilization of various electronic delivery channels. He also stated that the e-banking concept has been in existence for some time although in form of Automated Teller Machines (ATMs) and telephone banking and that in most recent times due to advancement in IT, it has been carried out through the use of the internet – a new delivery channel that has helped banks and their customers to carry out transactions conveniently and faster. Chavan (2013) also holds that the internet offers around the clock services irrespective of the customer's location, which gives customers the opportunity with ease and convenience to perform banking transactions such as cash withdrawals, money transfer, payments for goods and services, payment of utility bills, and so on, at any hour of the day. Elisha (2010) also posits that e-banking is the automated delivery of banking services and products to customers through the use of electronic interactive communication channels. By this definition, Elisha (2010) implies that e-banking platforms or channels enable bank customers to perform banking transactions such as funds transfer, cash withdrawals, payment for goods and services, etc through the use of interactive electronic media that allow the customers to carry out transactions by themselves without relying on bank Tellers.

Recent advancements in Information Technology play vital and significant roles in the development of new methods of carrying out banking transactions which has given customers the opportunity of performing banking transactions independent of the bank Tellers such as funds transfer, cash withdrawal, payment for goods and services, payment of utility bills, etc (Elisha, 2010). The increased use of mobile communication devices and the internet has also increased the utilization of e-banking services by customers because of the ease and convenience (Edojariogba, 2014). These channels for e-banking transactions have over the years become robust channels for carrying out banking transactions such as purchase of goods online and payment for goods and services (Edojariogba, 2014). Developments in Information and Communication Technology have brought about a lot of changes in banking and in almost all facets of life. E-banking services which mostly are carried out as online banking transactions are now replacing the face-to-face traditional methods of carrying out banking transactions in Nigeria (Gbadeyan et al., 2011; Edojariogba, 2014). E-banking has also added value to customers' satisfaction in terms of service quality, convenience, availability, and security (Chavan, 2013).

Some authors and researchers have described and defined e-banking in different ways:

1. Electronic banking is the means by which the services and products of banks are made available to their customers through the use of internet and electronic digital devices irrespective of the location of the customer and time of carrying out the transaction (Ovia, 2002). This implies that electronic banking channels enable customers to carry out transactions on their own with ease and convenience. Consequently, customers can carry out banking transactions, such as withdrawal of cash, deposits or transfer of funds, make payment for goods and services online without the direct help of the bank (Ovia, 2002).
2. Electronic banking is the use of electronic channels such as telephone, mobile phones, computer systems, internet, and so on for the delivery of banking services and products (Sharma, 2011). This implies that for a customer to successfully use any e-banking product for performing financial transactions there must be internet connection and smart digital systems such as computers and mobile phones (Sharma, 2011). Electronic banking has increased the efficiency and effectiveness of banking transactions thereby improving the pace of delivery of banking services to customers (Sharma, 2011). This implies that customers could carry out banking transactions and have access to banking services such as payment of bills, funds transfer, checking of account balance, information about the bank and their accounts using electronic devices connected to the internet at their own convenience (Sharma, 2011).
3. Electronic banking is the term used for new era banking structure (Elisha, 2010). The term can ordinarily be referred to as online banking and it is a product of Personal Computer (PC) banking which uses the internet as the delivery channel (Elisha, 2010). This implies that electronic banking requires the use of computer systems connected to the internet (Elisha, 2010). This method enables customers to carry out banking transactions such as transfer of funds, payment of bills, viewing and

checking of account balances, payment of mortgages and purchase of financial instruments and certificates of deposits (Elisha, 2010). Elisha (2010) also maintained that e-banking is the automated delivery of existing and new banking products and services to customers through various electronic interactive communication channels.

4. Electronic banking includes the systems that enable bank customers to have access to their accounts, carry out business, or get information on banks' financial products and services by means of a public or private network, the Internet or mobile phone (Elisha, 2010). Similarly, Ubong (2010) posits that e-banking means the emergence of new relationships with customers, regulatory bodies, suppliers, and banking partners with modern digital technological tools.
5. Imiefoh, (2012), also described electronic banking (e-banking) as a term used to refer to the process by which a customer may perform banking transactions electronically without physically visiting the bank. This may also imply the computerized delivery of new and existing banking products and services directly to customers via electronic, interactive communication channels. (Imiefoh, 2012). Electronic banking has experienced a volatile growth in Nigeria and has changed the old methods of carrying out banking transactions (Balogun et al., 2013; Elisha, 2010).

2.2. Electronic Banking Channels in Nigeria

The various e-banking channels which have been identified by the researcher are described below:

2.2.1. Telephone Banking

Telephone banking (also known as Tele-Banking) is an e-banking service provided by commercial banks for utilization by customers. The telephone banking channel enables customers to carry out banking transactions such as confirmation of account balance and confirmation of other banking information over the telephone. Most telephone banking services use automated phone answering system while interacting with the platform using telephone keypad response or voice recognition capability (Okechiet al., 2013). This channel enables customers to get to know their account balances and other information about their accounts and the bank without an actual physical visit to the bank (Elisha, 2010).

2.2.2. Mobile Banking

Mobile banking (also known as M-banking) is an e-banking platform that allows customers to carry out banking transactions and make enquiries through the use of a digital mobile phone that is connected to a telecommunication network or wireless network (Shah et al., 2009; Elisha, 2010). The earliest mobile banking services were offered through sending and receiving Short Message Service (SMS) (Shah et al., 2009). With this platform, customers are able to send SMS to confirm account balances and other information about the bank using their mobile phones, while the bank also respond to the customers through SMS (Shah et al., 2009). Unsolicited SMS messages sent out to customers by the bank to disseminate information about the bank and its services are referred to as push messages (Shah et al., 2009; Edojariogba, 2014). Presently, customers are able to use their mobile phones to carry out transactions such as funds transfer, receive debit/credit alerts of transactions carried out, and send messages to the banks referred to as pull messages, for obtaining information or performing a transaction on their bank accounts. Mobile banking also allows customers to have access to their accounts where ever they are within the coverage of the telecommunication network they utilize (Balogun et al., 2013; Edojariogba, 2014). The M-banking platform also allows customers to carry out transactions such as payment for goods and services, and payment of utility bills (Edojariogba, 2014). In Nigeria, the introduction of the cashless transaction policy by the Central Bank of Nigeria (CBN) in January 2012 has increased the use of M-banking channel by customers for transactions involving large amount of money. The cashless policy stipulates a cash handling charge for daily cash transactions that exceeds N500,000:00 for individuals and N3,000,000:00 for corporate entities (Odior et al., 2012). This policy was aimed at reducing (not elimination) the amount of physical cash circulating in the Nigerian economy, and encouraging people to carry out more electronic-based banking transactions (Okechi et al., 2013; Odior et al., 2012). This policy has made most customers with mobile phones to adopt and utilize available mobile banking channels (Okechi et al., 2013; Odior et al., 2012).

2.2.3. Online Banking

Online banking (also known as Internet banking) provides a platform for bank customers to carry out financial transactions on their own through the use of a secured internet website operated by the commercial bank, a retail or virtual bank, credit union or building society (Edojariogba, 2014). The internet banking enables customers to access their financial institutions' online banking facility with access details, access codes, and passwords given to them by the financial institutions (Edojariogba, 2014). For Online (Internet) banking services to be successfully carried out, customers must be connected to the internet through a telecommunication service or wireless service (Edojariogba, 2014; Tope, 2010). If these are not available, then the use of internet banking for banking transactions becomes impossible. With the exception of cash withdrawal almost all banking transactions ranging from payment of bills to making financial investments can be carried out using internet banking platforms (Ahmad, et al., 2011).

2.2.4. Point-of-Sale (POS)

The Point-Of-Sale (POS) e-banking channel allows customers to make payment for goods and services to clients known as merchants, in the premises of the merchants (Okechi et al., 2013). A Point Of Sale terminal is a portable device that allows customers with cards (such as ATM cards) to carry out banking transactions outside the bank's environment (Okechi et al., 2013). This e-banking platform allows bank customers to carry out financial transactions with clients (merchants) who have the device deployed in their premises irrespective of the merchant's bank and the customer's bank (Okechi et al., 2013). The POS services enable customers

transacting with merchants to make cashless payments for goods and services directly into the merchant's account. The customer can also carry out transactions such as account balance enquiry, and the printing of mini bank statement with the use of a credit card or a debit card (Okechi et al., 2013). This channel is mostly preferred by customers and merchants who prefer cashless transactions (Okechi et al., 2013). With the POS, the customer's account is immediately debited at the physical point while the monetary value is credited to the merchant's bank account within a short period of time (Okechi et al., 2013). This channel requires the account holder (customer) to conveniently make immediate payments for goods and services acquired from the merchant (Okechi et al., 2013). The POS terminal is a machine that has a display screen, a barcode scanner, and a card reader (InterSwitch Ltd, 2011).

2.2.5. Automated Teller Machine (ATM)

Automated Teller Machine (ATM), also known as a automated banking machine (ABM) or Cash Machine, is a computerized telecommunications machine that provides customers of a financial institution access to carry out financial transactions within or outside the banking premises without the need for a human bank teller (Jegade, 2014; Okechi et al., 2013). The ATM also enables customers to perform banking transactions such as withdrawal of cash, checking of account balances, and printing of mini account statements (Okechi et al., 2013). On most ATMs, a customer is identified and granted access to carry out financial transactions after inserting a plastic ATM card with magnetic strip or a plastic smart card with a chip (Jegade, 2014). The user is authenticated into the machine after entering a Personal Identification Number (PIN) (Jegade, 2014). With the ATM, customers can access their bank accounts in order to make cash withdrawals from their funded accounts, credit card cash advances, transfer of funds to third party accounts, check account balances, and purchase of prepaid mobile phone credit (Jegade, 2014). The ATM provides a 24 hours service to customers (Danlami et al., 2014). The machine is programmed in such a way that it allows customers to withdraw cash or transfer funds up to a certain limit anytime of the day without being attended to by the bank staff (Danlami et al., 2014). In Nigeria, the ATM technology supports faster service delivery and helps in decongesting long queues inside the banking halls (Danlami et al., 2014). With advancement in technology, more complex machines enable customers to perform advance transactions with their cards such as making of deposits, payments of bills, among others. Sometimes, not always, customers are usually made to pay certain fees for these transactions for using this facility depending on the bank's terms and conditions for acquiring the cards and utilization of the machines for transactions (Okechi et al., 2013). Some of the ATM platform providers are InterSwitch, VPay, ETranzact, and QuickCash (Chinedu et al., 2012). These platform providers are responsible for the deployment of ATM services and provision of the means to use different banks ATM cards on different banks networks in all branches nationwide (Chinedu et al., 2012). InterSwitch, today has all banks in Nigeria connected to its network (Chinedu et al., 2012). Connectivity makes it possible for customers to use their cards in all bank branches nationwide and in almost all ATMs (Chinedu et al., 2012).

2.2.6. Smart Card

The smart card (also known as a Debit card) is a pocket-sized card with embedded chips or integrated circuits which can process data. The Master card and Verve card are examples of smart cards. The Verve card is a Chip and Pin enabled multipurpose payment card that give customers online-real-time access to funds. It is a new debit card developed by InterSwitch Limited, a Nigerian company whose operations are presently limited to only Nigeria (Okoli, 2014). Verve is the new name for the more secured and convenient InterSwitch card which with the introduction of Chip and PIN makes online financial transactions safer (Okoli, 2014). Verve card is normally issued by a commercial bank and powered by InterSwitch; it is the first and only chip card accepted on all available payment channels in Nigeria (Okoli, 2014). The Verve card allows users to easily make payment for goods and services on ATMs, POS terminals and on the web (Okoli, 2014). The Verve card is one of the most secured debit cards, because the Chip technology guarantees that a customer's information stored in the card are not accessible to unauthorized persons (Okoli, 2014).

2.3. Adoption of E-banking

Advancement in Information Technology has brought about competitive market conditions which have also had impact on the customers of commercial banks in Nigeria. In order for commercial banks in Nigeria to succeed in this electronic revolution, attempts must be made to understand the attitudes of their customers towards ICT as related to banking as this will enable banks to influence the attitudes of their customers which will ultimately help in improving the competitiveness of commercial banks.

The overlap between adoption and marketing of e-banking delivery channels by the banks, and the changing customer segments has created new environments for the development and deployment of new e-banking channels (Mols, 1999).

According to Rogers (1995) and Shoemaker (1971), consumers go through "a process of knowledge, persuasion, decision, implementation and confirmation" before they are ready to adopt a product or service. Knowledge has to do with the socio-economic characteristics, Personality variables and communication behavior towards innovativeness (Rogers, 1995). According to Rogers (1995), early adopters have more formal education than later adopters have and are more likely to be adopted as fast as they can. In relation to persuasion, Rogers (1995) emphasized that the potential adopter's attitude towards the innovation is formed in this stage. By anticipating and predicting future use satisfaction and risk of adoption, the potential adopter develops positive or negative attitudes to the innovation, which play important role of modifying the final decision (Rogers, 1995). Once an individual engages in activities that lead to either an adoption or rejection of an innovation, the decision stage occurs then. In this stage, the adopter starts to actively seek out information about the innovation that assists the decision-making. In the implementation stage mental information processing and decision making come to an end, but the behavioral change begins. After the adoption of innovations, the adopter keeps evaluating the results of his/ her decision and this forms the confirmation stage.

2.4. Level of Awareness of e-banking Channels

Consumers' level of awareness of e-banking channels influences the adoption. The e-banking literature supports that a factorsuch as knowledge (Sathye, 1999; Polatogluet al.,2001) has an impact on consumer's adoption of e-banking. Sathye (1999) highlighted that many consumers were simply unaware of e-banking and its numerous benefits. Sathye (1999) and Polatoglu et al., (2001) supported thisstatement that a customer's knowledge of e-banking products has an effect on adoption of the product. Sathye (1999) explains that the lack of awareness about electronic banking and its benefits contribute to the non-adoption of electronic banking products. He explained further that, the more knowledge and awareness a customer possesses about electronic banking, the easier it is for the consumer to adopt and utilize electronic banking channels. Sathye (1999) further strengthened this point by stating that customers who are more aware are more likely to perceive e-banking channels as more useful, easy to use and more reliable, thereby influencing their adoption and utilization.

Awareness has been explained in three dimensions with respect to the conviction behind the concept and the usage. These are; Perceived usefulness, Perceived ease of use, and Perceived reliability.

2.4.1. Perceived Usefulness

Davis (1989) asserts that the decision to use new technology is determined by the extent to which a person believes that it is cost effective in providing goods or services compared to the current method. Perceived usefulness is defined as the degree to which a person believes that using a particular e-banking technology will enhance their performance. It has been confirmed as an important variable that influences users' technology acceptance and therefore has received a great deal of attention from previous researchers.

2.4.2. Perceived Ease of Use

Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort. Extensive research over the past decade provides evidence of the significant effect of perceived ease of use on usage, either directly or indirectly through it effect on perceived usefulness. Information technologies that are easy to use will be less threatening to the individual (Moon and Kim, 2001). This implies that perceived ease of use is expected to have a positive influence on users in their interaction with E-banking systems. It is also found that ease of use positively correlates with use of consumer technologies, such as computer software. Suganthi et al. (2001) establishes therefore that, the more the consumer perceives electronic banking as easy to use, the more he or she is likely to adopt internet banking.

2.4.3. Perceived Reliability

Customers frequently do not trust internet technology for two specific reasons: Security of the system and worries about the reliability of internet services (Lee and Turban, 2001). Strong concern about security is one common factor related to unwillingness to use internet channels for commerce (Black et al., 2002). Most customers are not satisfied with the infrastructure of web security systems (Black et al., 2002). In internet banking, security is one of the most important future challenges, because customers fear higher risk in using the web for financial transactions (Black et al., 2002; Sathye, 1999). If the potential adopter of E-banking perceives that the new technology is not safe and believes that mistakes are likely to occur, he or she is not likely to adopt. Sathye (1999) found that the security dimension was an important determinant for consumers who used electronic banking. Furthermore, Sathye (1999) found that security was positively related to the use of electronic banking. For banks, their immediate need is not simply to reduce fraud in internet banking. It is also about retaining consumers' confidence and making customers rely, not just in their bank and its ability to deliver secure access to their money, but also in E-banking as a key delivery channel. Therefore, perceived reliability is expected to have a positive influence on adoption of internet banking. Perceived reliability has a positive impact on consumer adoption of internet banking.

2.5. Role of ICT in Banking

Information and communication technologies are playing a very important role in the advancements in banking. In fact information and communication technologies (ICT) are enabling banks to make radical changes to the way they operate. According to Consoli (2003), the historical paradigm of IT provides useful insights into the 'learning opportunities' that opened the way to radical changes in the banking industry such as the reconfiguration of its organizational structure and the diversification of the product line.

Banks are essentially intermediaries, which create added value by storing, manipulating and transferring purchasing power between different parties. To achieve this, banks rely on ICT to perform most functions, from book keeping to information storage and from enabling cash withdrawals to communicating with customers (Shah et al., 2009). In developed countries at least, this high degree of reliance on ICT means that banks spend a large chunk of their budget on acquiring as well as maintaining these technologies. Information Communication Technology provides a very limited return unless accompanied by changes in organizational structures and business processes. These changes also need to be followed by a diversification of service offerings, with many banks introducing new product lines such as credit cards, stock brokerage and investment management services. Thus, ICT has mostly enhanced productivity, as well as increased the choice for customers both in terms of variety of services available and in terms of the ways in which they are able to conduct their financial activities (Shah et al., 2009).

2.6. Electronic Banking and the Motivation behind its Participation by Operators (Banks)

E-banking is a significant investment, so the question must be answered as to what motivates banks to participate and deal with the associated problems and risk. Shah et al. (2009) summarizes some of the reasons often cited by banks to be their primary motive for implementing e-banking.

2.6.1. Customers' Demand

With the emergence of the digital economy, the balance of power seems to be shifting to customers. Customers are increasingly demanding more value, 24 hours availability with goods customized to their exact needs at less cost, and as quickly as possible. To meet these demands by customers, banks need to develop innovative ways of creating value, and e-banking is seen as one of those innovative ways to meet customers' expectations (Shah et al., 2009).

2.6.2. Selling More to Existing Customers

The financial services markets in most developed countries have matured considerably and there is very limited scope for creation of new markets. This means that the most common route to growth is to sell more products to existing customers. Early indications are encouraging as both the volume and value of new business generated from the Internet channel are growing for the banks, which have implemented e-banking. In some cases, such as Woolwich in the UK each e-banking customer holds four financial products on the average, which is a considerably higher figure than for traditional banking customers (Shah et al., 2009).

2.6.3. Changes in the Environment

There have been some significant shifts in the importance of different sectors of the economy. In most western countries, primary (such as mining, agricultural) and secondary (manufacturing) have been steadily declining, whilst the service (e.g. financial services) sector is growing in importance. This has increased the prominence of service sector organizations, resulting in more pressure on them to diversify their offerings and look beyond their immediate markets to create value. New technologies such as the Internet and mobile telecommunications are seen as key enablers in accessing new markets and the creation of value. Social changes are also forcing banks to change the way they interact with their customers. Customers are increasingly mobile (they move or travel more often), and this, coupled with the rise of single person households, means that demand for flexible services is rising at rapid pace (Shah et al., 2009).

2.6.4. E-banking is a Hygiene Factor

Some banks are offering e-banking because their competitors have done it, and not doing so will mean losing an important customer segment to traditional competitors as well as new entrants to the financial sector. If this is their sole reason for doing so, they often drag behind their competitors and lack of enthusiasm prevents them from using e-banking to boost other sources of innovation, which are often enabled by the new technologies (Shah et al., 2009).

2.6.5. Achieving Competitive Advantage

Most organizations aspire to achieve competitive advantage, but few attain or truly succeed, and even if attained, few are able to sustain this. As Internet banking has spread widely, it is no longer a source of competitive advantage on its own, at least in developed world. E-banking with the help of other technologies such as data mining can however help in other sources of competitive advantage such as faster product development, superior customer service and cross selling. To gain competitive advantage, banks must continually develop new and innovative services to differentiate themselves from the competition, as having a large branch network or even e-banking is no longer seen as a main source of competitive advantage. Innovative products and state of the art customer service are the key differentiating factors and e-banking could play a central role in achieving both. New types of interactions enabled by the Internet and other communication technologies create innovative relationships between consumers, marketers and suppliers of products and services (Shah et al., 2009).

2.6.6. To Achieve Efficiency

Some banks look at e-banking from a cost savings point of view. They may however fail if they are thinking only of providing low cost transactions, as these costs only become lower once a bank exceeds a critical mass of online customers, owing to the large upfront costs of implementing e-banking. Conducting cost/benefit analysis on a regular basis often gives a clearer picture in this regard, enabling the analysis of feasible alternatives in terms of the major costs involved together with the major benefits that are expected to accrue. E-banking can also help lower operational costs since, to offer e-banking, banks have to fine-tune their business processes, systems and the ways in which employees communicate with one another. This may be seen as an unnecessary and costly exercise initially, but in the long- run can prove immensely valuable, and may even enable a bank to survive the economic pressures and downturns (Shah et al., 2009).

2.7. Benefits of Electronic Banking to Banks

Understanding e-banking is important for several stakeholders, not least of which is management of banking related organizations, since it helps them to derive benefits from it. The Internet as a channel for services delivery is fundamentally different from other channels such as branch networks, telephone banking or Automated Teller Machines (ATMs). Therefore, it brings up unique types of challenges and requires innovative solutions. Many banks and other organizations have already implemented or are planning to

implement e-banking because of the numerous potential benefits associated with it (Shah et al., 2009). Some of these major benefits are briefly described below.

2.7.1. Attracting High Value Customers and Retention of Old Ones

E-banking often attracts high profit customers with higher than average income and educational levels, which helps to increase the size of revenue streams. For a retail bank, e-banking customers are therefore of particular interest, and such customers are likely to have a higher demand for banking products. Most of them are using online channels regularly for a variety of purposes, and for some there is no need for regular personal contacts with the bank's branch network, which is an expensive channel for banks to run. Some research suggests that adding the E-banking delivery channels to an existing portfolio of service delivery channels results in increases in bank profitability since high-income earning customers with greater profit potential would save in those banks (Young et al., 2007). Sheshunoff (2000) states further that the single most important driving force behind the implementation of full service e-banking by banks is the need to create powerful barriers to customer exiting. He argues that once a customer moves to full-service E-banking, the likelihood of that customer moving to another financial institution is significantly diminished. The main reasons for this behavior can be found in the consumer behavior theory: switching always requires much time and effort from the individual consumer. He concluded that the competitive advantage of e-banking channels for banks is very significant.

2.7.2. Image Enhancement

E-banking helps to enhance the image of the organization as a customer focused innovative organization. This was especially true in early days when only the most innovative organizations were implementing this channel. Despite its common availability today, an attractive banking website with a large portfolio of innovative products still enhances a bank's image. This image also helps in becoming effective at e-marketing and attracting young/professional customer base (Shah et al., 2009). In relation to internet banking, Brogdon(1999) elucidate that one of the main benefits of Internet banking to banks is enhancement of the bank's reputation.

2.7.3. Increase in Revenues

Because of a possible increase in the number of customers, retention of existing customers, and cross selling opportunities, the revenue base of e-banking operators is most likely to increase. It has also allowed banks to diversify their value creation activities. E-banking has changed the traditional retail banking business model in many ways, for example by making it possible for banks to allow the production and delivery of financial services to be separated into different businesses. This means that banks can sell and manage services offered by other banks (often foreign banks) to increase their revenues. This is an especially attractive possibility for smaller banks with a limited product range (Shah et al., 2009). E-banking has also resulted in increased credit card lending, as it is a sort of transactional loan that is most easily deliverable over the Internet. Electronic bill payment is also on rapid rise, which suggests that electronic bill payment and other related capabilities of e-banking have a real impact on retail banking practices, and rapidly expanded revenue streams (Younget al., 2007).

2.7.4. Easier Expansion

Traditionally, when a bank wants to expand geographically, it has to open new branches, thereby incurring high startup and maintenance costs. Electronic banking channels, such as Internet banking, Mobile banking, and Telephone banking, have made this unnecessary in many circumstances. Now banks with a traditional customer base in one part of the country or world can attract customers from other parts. This is possible because most of the financial transactions no longer require the physical presence of the banks near customers' residential areas or working places. In one case study in Shah et al., 2009, a bank based in the southern part of the UK was attracting customers from northern England, where it had no branches. In many countries today, banks share their resources such as ATMs and POS terminals, or use post offices as their main interaction points with customers for services such as cash and cheque deposits (Shah et al., 2009).

2.7.5. Load Reduction on Other Channels

Electronic banking channels are largely automatic by default, and most of the routine activity such as account checking or bill payment may be carried out using these channels. This usually results in load reduction on other delivery channels, such as branches or call centers. This trend is likely to continue as more sophisticated services such as mortgages or asset finance are offered using e-banking channels. In some countries, routine branch transactions such as cash/cheque deposit related activities are also being performed using ATMs, which has further helped in reducing the workload of the bank employees, and enabling them to use the saved time in providing better quality services to customers (Shah et al., 2009).

2.7.6. Cost Reduction

The main economic benefit of e-banking so far has been reduction of overhead costs of other banking channels such as utilization of Tellers in branches, which require expensive buildings and presence of a Teller. It also seems that the cost per transaction of utilizing e-banking channels for banking transactions is often significantly lower when compared to that of utilizing conventional or traditional offline banking methods, especially when a critical mass of customers is achieved. The consensus is that fixed costs of e-banking are much greater than variable costs, so the larger the customer base of a bank, the lower the cost per transaction would be. Other costs such as systems integration and extra security measures also take their toll (Shah et al., 2009).Gbadeyan et al. (2011) and Jegede

(2014) also posit that the overall costs of doing banking transactions with e-banking are reduced compared to doing the transactions using the conventional offline method.

2.7.7. Organizational Efficiency

To implement e-banking, organizations often have to re-engineer their business processes, integrate systems and promote agile working practices. These steps, which are often pushed to the top of the agenda by the desire to achieve e-banking, often result in greater efficiency and agility in organizations. However, radical organizational changes are also often linked to risks such as low employee morale, or the collapse of traditional services or the customer base (Shah et al., 2009).

E-banking is fast becoming a norm in the banking industry, and is being implemented by many banks in developed and developing economies around the globe. The main reason behind this success is the numerous benefits it can provide to operators. It can provide a cost effective way of conducting business and enriching relationship with customers by offering superior services, and innovative products, which may be customized to individual needs.

2.8. Benefits of Electronic Banking to Customers

A 'customer first' approach is critical for success in e-banking. Customers hold the key to success and bankers must find out what different customers want and provide it using the best available technology, ensuring that they are acting on the latest, most up-to-date information. In modern business environments, customers want greater choice. They want the traditional range of banking services, augmented by the convenience of online capabilities and a stronger focus by banks on developing personal relationships with customers (Shah et al., 2009).

Napur (2010) stressed that e-banking can be made available 24 hours a day and 7 days in a week throughout the year; and a widespread availability of the Internet, even on mobile phones, means that customers can conduct many of their financial tasks virtually anywhere and anytime. However, it is much more feasible in developed countries, but gradually gaining grounds in developing countries.

Sathye (1999) expound synonymously that, the emergence of Internet has had a significant impact on the diffusion of electronic banking. With the help of the Internet, banking is no longer bound to time or geography. Consumers all over the world have relatively easy access to their accounts 24 hours per day; seven days a week. It makes available to customers a full range of services including some services not offered at branches. This affirms the fact that, wireless communications in e-banking are becoming accessible.

Mols(1998) further pronounced from a survey conducted in Denmark that, internet banking has made it possible for banks to provide customers with varieties of financial services 24 hours daily.

Yet again, e-banking from a customer's point of view is that most banks provide accounts aggregation services, at least internally. Accounts aggregation enables a customer to be presented with all his/her account (current account, saving account, mortgage account) details on a single page. Customers can have their financial data from many banks on one page but it currently require customers to provide their account passwords to the aggregator (Sathye 1999).

Furthermore, the greatest benefit of electronic banking to customers is the fact that the e-banking services are cheap or even free to customers. However, cost of subscription seemed to be one factor militating against Internet banking (Sathye, 1999). Two important factors in the cost debate are: geographical differences and disparities between the costs of Internet connections and telephone call tariff. It has also been argued that electronic banking products are more likely to change in response to customers' demands (Brogdon, 1999). Internet banking has the advantage that the customer does not need to travel to and from a bank branch; in this way, Internet banking saves time and money, provides convenience and accessibility, and has a positive impact on customer satisfaction (Roche (2014). Customers can manage their banking affairs when they want, and they can enjoy more privacy while interacting with their bank.

Moreover, it has been claimed that Internet banking offers the customer more benefits at lower costs (Mols, 1999). Turban et al. (2000) states that Internet banking is extremely beneficial to customers because of the savings in costs, time and space it offers, quick response to complaints, and improved service delivery. In the long run, all these benefits make banking and financial transactions easier for customers.

2.9. Barriers to the use of Electronic Banking Channels

The following factors demonstrate why e-banking channels may be difficult to use, or why a bank may not realize the full benefits from it.

2.9.1. Access to Internet

Although the growth of the Internet has been very fast, there is still a large population not connected to the Internet. Lack of computer literacy, high cost of computer hardware, high call tariff rates, and various other social and economic factors are some of the reasons cited for this (Walczuch et al., 2000). The use of the internet as a new alternative channel for carrying out financial services has become inevitable rather than just a method of achieving viable gains with the advent of globalization and intense competition (Napur, 2010). In order to have right to use a financial institution's online banking facility, a customer must first be given personal Internet access which he gets by first registering with the financial institution and request for the internet service. A user name and password for access is then issued to the customer for verification to gain access into the institution's internet banking portal. Internet banking gives both bankers and customers the liberty to carry out online banking transactions (Ogunkoya et al., 2014).

2.9.2. Consumer Behaviour

A large number of consumers of financial services are still reluctant to conduct their financial management online. A study of consumer habits in 10 countries found that two-thirds of consumers do not consider online services important and that almost 30 percent do not know whether their bank offers Web-based services (Regan and Macaluso, 2000). Changing consumer behavior takes many years, as was the case with the 10-year adoption cycle of the ATM. This process can be accelerated with aggressive marketing and high value-added features, two things that are lacking in today's online banking market (Franco and Klein, 1999). This can also be true for some businesses, which may be even slower than consumers in adopting new technologies. Factors such as security, perceived difficulties of use, perceived usefulness; functionality and lack of promotion (such as availability of cheaper products on new channels) are most commonly cited factors, which are hindering the widespread adoption of new technologies (Cheng et al., 2006).

2.9.3. Language and Culture Issues

These play a major role in global e-Commerce. Although English is accepted as the primary language of the Internet worldwide, in some cases a website has to be designed specifically to suit the market that it is trying to reach (Shah et al., 2009). The main problems associated with this are speed and cost. It takes a human translator up to a week to translate a small website into just one language (Turban et al., 2000). Financial services related websites are usually very large and consume large resources in the translation process. The problem does not end with the translation of a website; it also needs to be adapted to the local culture to attract visitors. Banks around the world would do well to learn from Swiss banks, which successfully offer their services in several different languages (Turban et al., 2000).

2.9.4. Fear of Competition

Some banks have been hesitant to promote e-banking systems, fearing that their costs will become too high and that it will be difficult for them to match the prices of competing Internet only banks (Shah et al., 2009). These fears have proven to be significant in most developed markets. Mols (1999) also stresses this point but suggests that not offering services is not an option, instead, companies should focus on other means such as product differentiation to protect themselves from excessive competition. Traditional banks could also use their well-established brand names and product development expertise to manage competition from new entrants (Mols, 1999).

2.9.5. Security Issues

Internet security is still one of the major issues hindering the growth of Internet related trade. Since the Internet is an open network, high security risks are involved with financial transactions, and that risk could either be inside the system or outside the system (Daramola, et al., 2014). Internet fraud is common, and related stories of online fraud on bank accounts get immediate media attention, making people hesitant to bank online (Brian et al., 2011). Different security methods (including hardware and software) are being tested and employed currently but there is still some way to go to win the trust of a large majority of customers (Mols, 1999).

2.9.6. Availability of Resources

For some banks, lack of financial and human resources will be a problem because offering the sophisticated Internet based services is an expensive project requiring major changes in IT infrastructure (Mols, 1999). Walczuch et al. (2000) synonymously reported that the primary deterrents for businesses establishing a Web presence is startup costs and the costs associated with major organizational changes required for such moves. Mols (1999) suggests strategic partnerships between banks to share such costs. These partnerships could combine to develop e-banking related systems. However, finding suitable partners in very competitive environments may prove difficult.

2.9.7. Technical Issues in E-banking

Banks rely heavily on ICT for their internal operations and their interaction with individual as well as business customers (Owusu-Afriyie, 2012). To deliver services via the e-banking channel, a bank needs Internet technologies for universal connectivity, back end applications such as account systems, support applications such as Customer Relationship Management (CRM systems), and communication technologies to link e-banking to the payment systems. Backend systems required by banks include data processing systems, accounts management systems and management information systems. These systems constitute the pillar of e-banking. Most of these systems were developed before the arrival of e-banking (thus the term legacy systems used for them) so they often lack connectivity, meaning they are difficult to connect to each other or with new systems. Electronic banking often requires rapid modification in systems to respond to changes in the market, and because of lack of flexibility in these systems they are very difficult to modify swiftly. Lack of integration with other systems is one of the most common reasons for the failures of many e-banking projects (Shah et al., 2009).

In addition, e-banking becomes very feasible when there is a website with which customers can access. The main difference is that when customers login they do most of the work themselves without any assistance. Therefore developing a user friendly and functionality rich websites is critical for the adoption and utilization of banking (Walczuch et al., 2000). To create a positive experience, a great deal of planning, resources and expertise needs to be invested in the development and ongoing maintenance of websites. Website development related issues are growing in complexity giving rise to a debate about technical versus social approaches to the development. It requires a comprehensive approach to address integration and scalability, and dynamic responses to

changes in requirements and technologies. Electronic banking, like other electronic business systems is multifaceted, large-scale, and mission-critical (Walczuch et al., 2000).

2.10. Review of Similar Research Studies

Balogun et al. (2013) carried out a research to investigate factors that influenced customers' satisfaction on the use of e-banking products in Nigeria. The researchers conducted the study by randomly selecting 20 commercial banks operating in Ibadan, Nigeria. The main instrument for data collection was a questionnaire, while statistical tools used for data analysis Cronbach's alpha and multiple regression analysis. From the findings of their research, they were able to discover that quality service on SMS alert, e-mail, alerts, electronic opening of accounts and ATM were the major factors that influenced customers' satisfaction significantly in Nigeria. Their findings also revealed that telephone banking, mobile banking, Point of sale (POS), smart cards and television had positive influence on customers' satisfaction. They also made recommendations to management of commercial banks to improve on service quality, increased number of ATMs, and protection of confidentiality of customers' data as ways of attracting customers to use e-banking channels.

Singhal et al. (2008) also carried out a research study to determine customers' perception towards internet banking and to identify major contributing factors to the use of internet banking. In their studies, they explored the major factors responsible for utilization of internet banking by customers based on the customers' perception on different internet applications. The researchers utilized both primary and secondary data. The primary data was collected using a structured questionnaire which was the main data collection instrument. The secondary data were collected from different published sources. The main sampling technique used for the collection of primary data was convenience sampling on a sample size of 80 respondents. The statistical tools used were Principal Component and Factor Analyses, Analysis of Variance, and frequency/percentage analysis. They also used pie charts and bar chart for presentation of data. SPSS version 16.0 was used to analyze the research data. From the analysis carried out, the researchers were able to find that factors such as utility request, security, utility transaction, ticket booking and funds transfer were the major factors responsible for customers' utilization of internet banking.

Ahmad et al. (2011) also carried out a research study to examine the factors that contribute and enhance the adoption of e-banking in Jordan, and the impact of e-banking functionality on the satisfaction outcomes for Jordanian commercial banks customers.

The main sampling technique used to select banks customers from the population was the purposive sampling, while the main data collection instrument for the research was a questionnaire. A total of 185 questionnaires were distributed out of which 179 were fully and correctly completed. The customers were selected from a population that consisted of all commercial banks customers operating within the Hashemite Kingdom of Jordan. The main statistical tool used in the research was the multiple regression analysis. The researchers were able to find out that accessibility, security, convenience, privacy, content, design, speed, fees & charges were the main functionality factors that influenced customers to utilize e-banking products. They also found out that these functionality factors all had statistical significant impacts on customers' satisfaction, although security, privacy, and content appeared to have the greatest impacts on satisfaction. The researchers also recommended that future research studies be carried out on the subject matter so as to be able to extend the findings of the research to other geographical areas and among managerial employees of the commercial banks.

Bello (2005) also carried out a similar research to determine and assess the impact of e-banking services on customer satisfaction in the Nigerian commercial banking industry. The researcher sampled respondents from the population of customers of First Bank, Zenith Bank, and GT Bank in Lagos, Port Harcourt, and Kaduna, all in Nigeria. A sample size of 180 customers (60 from each bank) was used. The main sampling technique used was the Judgmental sampling, given the fact that the population of customers was infinite. The main data collection instrument was a questionnaire, while the statistical tools used were frequency/percentage analysis and Chi-square analysis. From the analysis carried out, the researcher was able to find out that many customers in Nigeria were aware of the positive developments in ICT which has led to the introduction of new delivery channels for Nigerian commercial bank products and services. The researcher also discovered that customers who utilize e-banking services were still not satisfied with the quality and efficiency of the services. The researcher also recommended that creation of awareness about the availability of e-banking products and services, and how they operate as this would be beneficial to customers.

Ogunlowore et al. (2014) in their research study to examine the impact of e-banking on the satisfaction of commercial banks customers in Nigeria, and to identify the challenges facing the effective implementation of electronic banking system in Nigeria used a questionnaire as the main data collection instrument to collect data from respondents. The statistical tools used were descriptive statistics, and Chi-square statistics, while statistical tables were used for presentation of data. The research population was the population of customers of GT Bank Lagos, Nigeria. A sample of 120 customers was selected from the population and questionnaires were given to them. The researchers were able to retrieve back 100 completely and correctly filled questionnaires. From the analysis carried out in the research study, they researchers found that there was a significant relationship between electronic banking and customers' satisfaction. They also found that e-banking has become popular to bank customers because of convenience, flexibility, and transaction related benefits like speed, efficiency and accessibility. They also found that some of the challenges of e-banking utilization in Nigeria were insecurity and electricity challenges. The researchers recommended that critical infrastructure such as steady electrical power supply; security and telecommunications should be strengthened to ensure optimum utilization of e-banking by customers in Nigeria so as to increase the level of satisfaction of the customers.

Napur (2010), carried out a similar research study on 'e-banking and customers' satisfaction in Bangladesh: Analysis'. The research study was aimed at understanding the impact of variables of e-banking on customer satisfaction in Bangladesh. The researcher tried to analyze customers' satisfaction levels with e-banking services in Bangladesh, problems of e-banking services, benefits of e-banking services to customers, and recommendations on how commercial banks in Bangladesh can improve on e-banking services. The

research made use of both primary and secondary data for this research study. The main data collection instrument for the research was a questionnaire. The researcher was able to get a sampling frame for the population under investigation. The sampling frame consisted of 100,000 commercial bank customers who have been utilizing e-banking services between 0-3 years in Bangladesh. A sample of 400 customers was drawn from the population and used as the research sample to be investigated. The main sampling technique used in selecting sample members was a simple random sampling technique. The utilization of simple random sampling technique was possible because of the availability of a sampling frame. The respondents were all given self-enumerated questionnaires to fill and return same back. The questionnaire was designed in a way that respondents could respond to the questions under each e-banking service quality variable in the research study on a 5-point Likert scale. The researcher distributed a total of 400 questionnaires and was able to retrieve 250 completely filled ones from the respondents, which gave the researcher a response rate of 62.5%. The main statistical tool used in the research study was the OLS multiple regression analysis. This tool was used to develop a statistical model using customer satisfaction level as dependent variable and five dimensions of e-banking service quality (reliability, responsiveness, assurance, empathy, and tangibles) as independent variables. The researcher used the SPSS computer software to carry out the data analysis. The result of the multiple regression analysis indicated that customers' satisfaction with e-banking was above satisfactory level (mean value of 3.93 on a 5-point Likert scale). The result also indicated that customers were generally satisfied with reliability, responsiveness, assurance, and empathy which come from quick services, affordable service charges, ease of depositing and withdrawing money, discontinuous function of server, ATM booths, getting account balances/statements through SMS and e-mails, and error free records. However, customers' satisfaction for tangibles such as equipments, physical facilities, and so on, indicated a low average score (less satisfaction). The result of the multiple regression analysis indicated that there was a relationship between customer satisfaction with e-banking services and reliability, responsiveness, assurance, empathy, and tangibles. Napur (2010) also made the following recommendations in his research study:

- Banks should try to mobilize and attract more customers into utilizing e-banking services by mobilizing more deposit schemes through better marketing and incentive measures.
- Banks should make e-banking services more flexible.
- Banks should develop e-banking communication among branches.
- Banks should increase the number of ATM booths for public use.
- The decision making process concerning e-banking services should be faster.
- Banks should make SME section of e-banking to be more flexible.
- Banks should make e-banking services to be according to the customer's expectation and satisfaction.
- Banks should arrange the demonstration programs for clients to enjoy the e-banking services properly.
- Government should be pioneer to develop the IT infrastructure in Bangladesh.

Attah-Bochwey et al. (2014) carried out a similar research titled 'Electronic Banking and the Challenges of the Ghanaian Business Environment'. The researchers focused their research on Ecobank Ghana. The aim of the research was to determine the adoption, challenges, and some critical drivers that lead to the adoption of e-banking in Ghana. The researchers utilized both primary and secondary data in the research. The main data collection instruments for the primary data were semi-structured interview and questionnaire, while the secondary data were collected from Ecobank Ghana, and other published reports and materials. The researchers utilized purposive and random sampling techniques in selecting sample members from two different populations – population of officials from the IT department of the bank, and population of customers of Ecobank who utilize one or more e-banking services. The researchers selected 10 officials of the bank's IT department using purposive sampling technique and 50 customers who utilize one or more e-banking services using random sampling technique. The researchers were able to interview all the 10 IT officials of the bank selected; this implies that the researchers got a 100% response rate in the interview. The researchers were also able to give out 50 questionnaires to the 50 customers selected. They were also able to get back 50 completely filled questionnaires. This also implies that they got a 100% respond rate on the questionnaires. The main statistical tool used in the research study was frequency/percentage analysis. The researchers were able to identify five e-banking services available to customers of Ecobank Ghana, that is; ATM/card services, bank statement by e-mail, internet banking, SMS banking, and Ecobank mobile money. The researchers were able to come up with the following findings:

- Ecobank Ghana adopted e-banking strategies in response to customers' needs and the changing marketing trends in the banking industry, and because of other tremendous benefits e-banking provides.
- Some of the benefits of e-banking services to the bank include improvement of productivity, improvement in speed and efficiency in service delivery, improvement in customer services, costs saving, revenue generation, and public image enhancement.
- Some of the benefits of e-banking services to customers include convenience, time saving, greater control over finances, and cost effective way of conducting financial transactions.
- Some of the critical factors that drive customers to adopt e-banking services were, around the clock (24hours x 7days) availability of e-banking services, information security, efficient and effective customer support, and internal and external customer education.
- Most customers had preference for ATM relative to the other e-banking products because the ATM provides a 24 hour teller electronic terminal that accord customers the opportunity to carry out transactions at any time of the day and because of its efficiency and user-friendly ability.

The researchers also found out the following as challenges of e-banking in Ghana:

- High cost of implementing e-banking services
- Lack of solid technological infrastructure in Ghana
- Security issues with e-banking services
- Increased pace in technology advancement
- Unreliable network system
- High fees/charges for utilizing e-banking channels for transactions
- Limit placed on amount customers can withdraw or transfer
- Wrong debits
- Unreliable power source/supply

The researchers also suggested ways to improve e-banking services in Ecobank Ghana. They made the following suggestions:

- Valid increase in security on the use of e-banking products.
- Increase in ATM outlets for public use.
- Educating and marketing customers on e-banking products.
- Regular maintenance of machines and network systems to reduce downtimes
- Introduction of prompt transaction data on phones
- Improvement on network connections
- Reduction of fees/charges for utilizing e-banking services.

Nakanjakko (2012) carried out a research on 'Electronic Banking and Customer Satisfaction, A case study of Centenary Bank – Nateete Branch'. The research was carried out with the objectives of determining the current level of customer satisfaction at Centenary bank – Nateete branch in Uganda, and to determine the relationship between e-banking and customer satisfaction. The researcher adopted a combination of quantitative and qualitative research designs. The researcher utilized both primary and secondary data. The primary data was collected through personal interviews and the use of questionnaires, while the secondary data was obtained from text books, journals, on-line published articles, local news papers, and internet search engines. This implies that the main data collection instrument was a questionnaire. The researcher gave out copies of the questionnaires to respondents who could read and write very well to fill by themselves and return back, while interviews were conducted for those who were unable to read and write very well using the questionnaire as guide. The researcher also used interview questions guide to conduct face-to-face interviews on some of the respondents to enable her get personal view points of respondents and first hand information from respondents, and because of rich data collection, cost effectiveness, speed, and ability to clarify questions, clear doubts, and add new questions to the questionnaire where necessary. The researcher used a purposive sampling technique as the main sampling technique to select sample members from the study population. The study population is made up of Centenary bank e-banking department staff and Centenary bank customers who utilize e-banking services. The researcher selected a sample of 50 respondents from the study population. The sample comprises is made up of 20 Centenary bank e-banking staff and 30 Centenary bank customers. Frequency/percentage analysis and Pearson moment correlation analysis were the main statistical tools used in the research. The researcher used the Statistical Package for the Social Sciences (SPSS) version 16 to carry out data analysis in the research study. The researcher was able to interview the 20 e-banking officials who were picked as respondents, as well as distributed questionnaires and retrieved completely filled questionnaires from all the 30 customers picked as respondents. This indicated that the researcher got 100% response rate. The findings of her research study were:

- Factors that influenced customers' adoption of e-banking were accessibility, convenience, privacy, security, design, content, speed, and fees/charges.
- Electronic services offered by Centenary bank were effective and was able to satisfy customers' banking needs.
- The ATM was the main e-banking channel used by customers of the bank, and there were insufficient ATM booths for customers.
- Electronic banking services were available at all times of the day.
- Customers enjoyed using e-banking channels to carry out banking transactions.
- Customers were highly satisfied with e-banking services each time they utilized them, which implied that most customers were satisfied with e-banking services of the bank.
- There was a weak positive relationship between e-banking and customer satisfaction.

The researcher also made the following recommendations:

- There is need to increase the number of Centenary bank ATM booths, as this will help reduce or eliminate long queues in the banking hall and existing ATM booths.
- The bank's representatives on e-banking services should improve on responses to customers' requests and complaints on a time manner.
- The bank should adopt e-banking services in order to enhance customer service delivery through the advancement of ICT, in order to remain relevant in the global banking system.
- Management of banks should ensure and continue to encourage the idea of computerizing Uganda and Ugandans.
- The bank should develop new e-banking services that are customer-centric (customers' needs should be given priority).

Nakanjakko (2012) also suggested the following areas for further research:

- Electronic banking and customer adoption.

- Customer satisfaction and its implications on bank performance.
- Electronic banking and customer loyalty.

Namugerwa (2013) also carried out another similar research on 'Electronic Banking and Customer Satisfaction in Commercial Banks, a Case study of Centenary Bank, Uganda'. The research study was aimed at finding out available electronic banking services available to customers in Uganda, determinates of customer satisfaction, and to determine if there was a relationship between e-banking and customer satisfaction. The researcher adopted exploratory and cross-sectional designs for the research study. The researcher utilized both primary and secondary data to execute the research. The primary data were collected using questionnaire as the main data collection instrument, while the secondary data were collected from published research works and journals. The research population for the study consisted of staff and customers of Centenary bank. The researcher used a sample size of 40 to carry out the study. 10 members of Centenary bank staff and 30 customers were drawn into the research sample using a non-random sampling technique. The main statistical tools used in the research were frequency/percentage analysis and correlation analysis. The researcher distributed 40 questionnaires to the respondents and was able to retrieve all the 40 questionnaires from the respondents completely filled. This indicated that the researcher achieved a respond rate of 100%. Some of the findings from the research study are:

- The researcher was able to identify the e-banking services available to customers in Centenary bank. These services are ATM, SMS banking, telephone banking, e-tax payment system, direct deposit, PC banking, mail banking, online transfer, cente mobile banking, e-bill payment, e-NSSF payment, and debit card purchase/payment.
- Customers were well aware of these e-banking services except e-NSSF and SMS banking, which they asked the bank to sensitize them on their availability and benefits of utilizing them.
- Most customers had preference for ATM services, although many of them were not aware that apart from cash withdrawals the ATM could perform other banking transactions such as deposits and transfers.
- The researcher also found determinates of customer satisfaction, These determinates are; service quality, meeting the needs and desires of customers, flexibility in using the e-banking channels, good working environment, fees and charges, and effective communication.
- The researcher also found out that there was no significant relationship between e-banking and customer satisfaction, and that this could be as a result of some of the weaknesses/challenges associated with e-banking such as insecurity, fraud, network downtime, limit to withdrawals and transfers.

Namugerwa (2013) also made the following recommendations:

- Centenary bank should always look for new means of improving on the existing e-banking services to enable them improve customer satisfaction.
- The bank should create customer awareness on the available e-banking services.
- The bank should, sensitize customers on how to use e-banking products, ensure security of e-banking services, and reliability of the services.
- The bank should advertise their e-banking products so that customers can be aware of the existence of these products, know the how important the services are, and how to use them.

The researcher also recommended other similar areas for further studies. She recommended that further research should be carried out on:

- Electronic banking and customer adoption
- Impact of ATM services on customer satisfaction
- Service quality of banking services and customer needs satisfaction
- Security, responsiveness, and reliability of e-banking and customer satisfaction.

Sharma (2012) also carried out a similar research study titled 'An empirical study of rural customers' satisfaction from e-banking in India'. The aim of the research study was to explore the different factors that militate against the growing development of e-banking in rural areas of India. The research had the following objectives:

- To analyze the overall satisfaction of rural customers' satisfaction from utilizing e-banking services.
- To identify the factors that influence rural customers' satisfaction from utilizing e-banking products.
- To identify the primary obstacles militating against the wide acceptability and tendency to use e-banking as a primary banking service in the rural areas of India.
- To summarize different qualitative factors that may help in improving the satisfaction levels of rural customers using e-banking.
- To test the strength of relationship of rural customers' satisfaction with factors identified to be influential to adaptability of e-banking and satisfaction from using e-banking services.

The researcher utilized primary data as the main data source for the research, while the main data collection instrument was a questionnaire. The questionnaire consisted of 9 general questions and 17 questions relating to the variables being studied. The 17 questions relating to the variables being studied were closed ended questions with answer options on a 5 point Likert scale. The researcher administered 650 questionnaires to respondents online and found only 520 questionnaires appropriate for use in the research study. The main statistical tools used in the research study were descriptive statistics, cronbach's alpha test, correlation analysis, regression, analysis, ANOVA, and factor analysis. The researcher used the Statistical Package for the Social Sciences (SPSS) version 20.0 was used in carrying out data analysis in the research study.

The findings of the research study were:

- The research data collection instrument and data research data were found to be consistent using the cronbach's alpha reliability test.
- Rural customers were satisfied with the reliability of e-banking services.
- Rural customers were satisfied with the adequacy of ATM and hardware availability.
- Rural customers were satisfied with the functioning of e-banking channels.
- Rural customers were satisfied with network availability.
- Rural customers were satisfied with the accuracy of transactions.
- Rural customers were satisfied with the speed of e-banking services.
- Rural customers were satisfied with the user-friendly nature of the e-banking channels.
- Rural customers were satisfied with the 24 hours per day availability of e-banking services.
- Rural customers were satisfied with the reliability of e-banking services.
- Rural customers were satisfied with the specialized e-banking services given to differently able persons.
- Rural customers were satisfied with the reliability of e-banking services.
- Rural customers were satisfied with the problem handling method by staff of the banks and authorities concerned.
- Rural customers were satisfied with the communication between bank and customers.
- Rural customers were satisfied with the fees/charges on e-banking transactions.
- Rural customers were satisfied with regular updates (like notification and acknowledgement of transactions) of e-banking services.
- Rural customers were satisfied with the safety of e-banking transactions.
- Rural customers were satisfied with the compensation (in case of any fraudulent transaction by unauthorized persons or error by the bank or e-banking channel).
- Rural customers were satisfied with the regulatory mechanism of e-banking.
- The researcher also found that the rural customers were mostly satisfied with provisions of updates, accuracy of e-banking transactions, and convenience of e-banking transactions.
- The researcher also found that rural customers had an overall high satisfaction with e-banking services.

Puopiel (2014) carried out a research on 'Prospects and Challenges of Electronic Banking in Ghana: The case of Zenith Bank, Sunyani'. The study was carried out with the aim of assessing the prospects and challenges of e-banking in Zenith Bank Sunyani, Ghana. The research adopted a case study design for the research study. The target population for the research was the population of staff and customers of Zenith Bank Sunyani who utilize e-banking services. The research sample size adopted for the research study was 50 comprising of 10 staff of Zenith Bank Sunyani and 40 customers of the bank who utilize e-banking services. The researcher utilized both primary and secondary data for the study, while the main data collection instrument was a questionnaire. The primary data was collected using questionnaires, while the secondary data were obtained from Zenith corporate plan, bulletins, and in-house newsletters. The researcher used purposive sampling technique to select staff of the bank into the sample, while accidental sampling technique was used to select customers who use e-banking services into the sample. The statistical tools used in the study were frequency/percentage analysis, statistical tables and charts. Statistical Package for the Social Sciences (SPSS) was used in analyzing the data. Puopiel (2014) was able to come up with the following findings:

- The e-banking products available to customers of Zenith Bank Sunyani were internet banking, telephone banking, ATM, visa debit/credit and prepaid cards, POS machine, and Z-prompt.
- Most of the customers understood e-banking to mean 'the use of internet and electronic media to carry out banking transactions'.
- Customers most preferred e-banking channel was ATM; and this was because of the wide range of services the ATM provides to customers such as withdrawals of cash, cash deposits, funds transfer from one account to another, and payment of bills. A good proportion of respondents also preferred a combination of ATM and another e-banking channel.
- The researcher found that privacy, easy detection of frauds, and good security features were the reasons why customers use e-banking channels; although he found that the major reason why customers patronize e-banking services for banking transactions was the good/robust security features of the e-banking channels.
- The researcher found some of the challenges of e-banking to be: limit on amount of cash withdrawal, unreliable network system, wrong debits, unreliable power source, and fees/charges for ATM transactions; although the issue of unreliable network system was found to be the paramount challenge of e-banking.
- The researcher also found some of the benefits of e-banking services to be: easy access to cash at any hour of the day, easy access to account information any hour of the day, saves time for customers to enable them perform other duties, reduction of long queues in banking halls, e-banking transactions are very fast, and very convenient method of doing banking transactions.

Puopiel (2014) concluded in his research study that e-banking products have helped improve customer services in commercial banks, and has guaranteed greater efficiency in the banking sector.

Izogo et al. (2012) carried out a research to determine the influence of customers' demographic factors in the adoption of e-banking products in Nigeria. The research study considered the following demographic factors: gender, marital-status, religion, income, age bracket, and level of education. The aim of the research was to find out if each of the demographic factors had relationship with adoption of e-banking. The researchers tested the null hypothesis that 'There is no significant relationship between customers'

demographic factors and the adoption of e-banking channels in Nigeria'. The researchers used mainly primary data to execute the research study which was collected from participants using self-administered questionnaires. This implied that the main data collection instrument for the research study was a questionnaire. The research population was the population of customers who utilized e-banking products in eight commercial banks operating in Offa, Kwara state, Nigeria. The banks were United Bank for Africa, Zenith Bank, Oceanic Bank, Skye Bank, Guaranty Trust Bank, First Bank, and Union Bank. The researchers selected a total sample of 150 from the banks using stratified sampling – proportional allocation method. The researchers distributed a total of 150 questionnaires to the participants of which 139 were completely filled and returned back, representing a 92.67% response rate. The researchers used frequency/percentage analysis and chi-squared test for independence were the main statistical tools used for data analysis in the research study. The findings of the research study were as follows:

- The e-banking channels in the commercial banks were ATM, internet banking, international money transfer, mobile banking, PC banking, and television banking.
- Customers were well aware of only ATM, international money transfer, and mobile banking.
- ATM and mobile banking channels were the most utilized e-banking channels
- There was no significant relationship between gender and adoption of e-banking channels.
- There was a significant relationship between marital-status and adoption of e-banking channels.
- There was no significant relationship between religion and adoption of e-banking channels.
- There was no significant relationship between income and adoption of e-banking channels.
- There was a significant relationship between age bracket and adoption of e-banking channels.
- There was a significant relationship between educational level and adoption of e-banking channels.

Izogo et al. (2012) concluded that there were convincing evidences that demographic variables do influence customers' adoption of e-banking in Nigeria. They recommended for further research to be carried out on this subject matter with increased sample size covering major cities in Nigeria so that the results and findings could be generalized.

2.11. Summary of Literature Review

The researcher in this chapter was able to review literatures on the meaning of electronic banking and its applications. The researcher also reviewed electronic banking products and channels in Nigeria as well as adoption of e-banking and factors that drive customers to adopt and utilize e –banking products/channels. The researcher also reviewed the role of Information Communication Technology (ICT) in Banking operations, and the motivation behind the implementation of e-banking policies and techniques for the bank and customers. The researcher also reviewed the benefits of e-banking to banks and customers. Also reviewed in this chapter are similar related published research works by other authors.

3. Research Methodology

3.0. Introduction

This chapter discusses the methods and statistical tools used in executing the research. The chapter is broken down into research design, sources of data for the study, research population and sample, sampling technique, data collection instrument and administration, statistical tools for data analysis, and methodological problems. The research is designed in a manner that gives the researcher opportunity and leverage to collect realistic information and data from participants required to carry out analysis on e-banking channels and customer satisfaction in Nigeria. The research thesis examines and evaluates the views and opinions of selected customers of commercial banks in Nigeria with regards to the adoption and utilization of e-banking services/channels. The research design adopted by the researcher is one that can be adjudged to yield the most reliable results under the given conditions in which the research was conducted. The main source of data for executing this research is the primary data source. The data is gathered through the use of questionnaires. This implies that the information and data used for analyses in the research study is first hand, collected directly from respondents.

3.1. Research Design

Research design refers to the logical structure of an investigation or inquiry at hand. It states what data is required, from whom, and how it is going to help answer the research questions posed (Jalil, 2013; Creswell, 2003). Stated differently, a research design is a detailed outline of how a research investigation would be implemented. It implies how the research data will be collected, the data collection instruments to be used, how the research instruments would be administered, and how the data collected would be analyzed (Jalil, 2013; Creswell, 2003). There are many research designs depending on the need of the researcher. The researcher in this research study has adopted the descriptive (cross-sectional) research design. According to Burns and Grove (2003), a descriptive design enables the researcher provide an image of a situation or circumstance as it happens. Descriptive research design allows the researcher to collect quantitative data on the subject matter or process under investigation. This design also helps in making judgment and in developing theories (Burns and Grove, 2003). This design enables the researcher to determine and examine relationships between a dependent variable and independent variables identified in the study. The design also allows the researcher to determine cause-and-effect interactions between the variables of interest. This design also gives the researcher the opportunity to carry out statistical analysis of the research data collected (Issa, 2004; Creswell, 2003).

3.2. Source of Data for the Research Study

This researcher utilized both primary and secondary data for the research study. The primary data were collected through the use of questionnaires which were administered to 420 respondents drawn from the commercial banks, while the secondary data were collected from journals, online published research works, internet search engines and websites. Through these sources the researcher was able to collect the required data required to carry out this research study.

3.3. Population and Sample

The concepts of a population and a sample as they apply to research are discussed in this sub-section of the thesis. In research, a population refers to a well-defined collection of individuals, items or objects that are known to have the same or similar characteristics which a researcher has considered for the purpose of investigation or inquiry (Issa, 2004; Umar, 2004; Jalil, 2013). In attempting to study a population, one is expected to enumerate all the individuals or items in the population; however, due to the large size of most populations, it is always very difficult to enumerate all the individuals or items that make up the population because of the huge cost implications and time constraint. Sometimes, even when it is possible to enumerate all the items in the population, if the enumeration is one that will be destructive, it will be unwise to enumerate the entire population. Some populations are also infinite and as such difficult to study all the items or individuals in them. These are some of the reasons why researchers prefer to investigate, enumerate or study a representative part of any population rather than the entire population (Issa, 2004; Neter et al., 1992; Freund et al., 1976).

On the other hand, a sample is a representative part of a population that is carefully selected from the population for the purpose of investigating or enumerating the sample elements that represent the entire population of interest (Jalil, 2013). Since it is almost impossible to enumerate all the individuals or items in a population of interest, researchers have resorted to studying or investigating only a representative part of the population, and the results and inferences made from such investigations will be generalized on the entire population (Jalil, 2013; Freund et al., 1976). This implies that a sample is a representative subset or fraction of a population under investigation, and because of the fact that most research populations are usually large and not always possible or feasible to enumerate, examine, and collect information from every member or item in the population due to time and cost implications, researchers prefer to select a representative sample from the population (Jalil, 2013; Issa, 2004). The representative samples are usually easier and less expensive to investigate or enumerate (Jalil, 2013; Freund et al., 1976). The sample is usually selected scientifically and carefully by the researcher using any of the sampling techniques, in such a manner that that the sample reliably and strongly represents the entire population from which it was drawn from (Jalil, 2013; Umar, 2004). The representative sample selected from the population must be of adequate size so as to give room for robust statistical analyses to be carried out on the data collected from the sample items or individuals (Issa, 2004). A research carried out using a representative sample drawn from a population of interest has the ability of finding facts about the sample which will also be true of the population (Neter et al., 1992; Freund et al., 1976). In order for a sample to truly represent a population, one must have a sample that is of adequate size, whose margin of sampling errors can be estimated and controlled using statistical methods as errors that would normally occur in the course of utilizing a population are not easily estimated and controlled using statistical methods (Issa, 2004).

3.3.1. The Research Population

The research population for this study is made up of all the customers of the Twenty-One (21) CBN approved commercial banks operating in Delta state, Nigeria. The actual size of the population is not known due to the fact that the population is almost infinite. This is also one of the reasons why it is almost impossible to have a comprehensive sampling frame for this population. A sampling frame is a complete list of every individual in a population of interest from which a sample is selected (Jalil, 2013).

3.3.2. The Research Sample

The number of individuals to be included in a research sample is referred to as sample size (Jalil, 2013; Cochran, 1977). Usually, an ideal or adequate sample size that is required to execute a research study is determined prior to the selection of individuals from the population into the sample (Jalil, 2013; Umar, 2004). If there is a comprehensive sampling frame for the population of interest, an ideal sample size could be determined using scientific methods. In the absence of a comprehensive sampling frame, other non-scientific methods would be used to determine an ideal sample size for the research (Jalil, 2013) in this research study, the ideal sample size required to execute the research could not be determined scientifically because of the constraints of the population of interest almost being infinite, and the non-availability of a comprehensive sampling frame. Because of these constraints, the researcher decided to use a non-scientific method based on his own judgment to determine an ideal or required sample size for the research study. The ideal sample size determined by the researcher for this study is one that the researcher feels will be adequate enough for him to execute the research and make generalizations about the population with a high level of reliability and confidence. The researcher adopted an ideal sample size of 420 to enable him execute the research with some degree of reliability and confidence. Twenty questionnaires each were given to each of the 21 CBN approved commercial banks operating in Delta state through their bank managers for onward distribution to customers who would participate in the survey. The researcher was able to distribute the questionnaires to selected customers from the banks through the bank managers after discussing with them in their monthly bank managers' forum. The researcher discussed with all the bank managers in the forum, and they all agreed to help and support him in distributing the questionnaires to respondents as well as collecting back completely filled ones from the respondents so as to provide the necessary information and data required by the researcher to successfully carry out the research.

3.4. Sampling Technique

This sub-section talks about the sampling technique/method used in selecting participants from the population of interest into the research sample. Due to the constraints earlier mentioned, the researcher was unable to employ a probability sampling method for selecting respondents from the population of interest; this prompted the researcher to use a non-probability sampling technique known as convenience sampling. Convenience sampling technique is a non-probability sampling technique which gives the researcher the opportunity of selecting sample members easily because of their convenience, proximity, and accessibility to the researcher (Jalil, 2013; Cochran, 1977). In the convenience sampling technique, sample members are picked into the sample because of their proximity to the researcher, ease to reach, and accessibility (Jalil, 2013; Cochran, 1977). In the convenience sampling technique, the researcher may not select members of the population that are true representatives of the population of interest; this is one of the disadvantages of utilizing the convenience sampling technique (Jalil, 2013; Cochran, 1977). Some of the advantages of using convenience sampling technique are the speed and ease to implement, it is less expensive, and sample members are readily available to be reached by the researcher (Jalil, 2013; Freedman et al., 1998; Cochran, 1977).

3.5. Data Collection Instrument and Administration

In research, data collection refers to the systematic and organized process of measuring and collecting information on certain variables of interest from the subjects in a manner that ultimately helps the researcher to determine answers to certain research questions, test hypotheses, and make valid conclusion (Issa, 2004; Durotolu, 2001). The main aim of data collection in research is to obtain quality information which is then translated into reliable data that can be used for data analyses and the results used to answer the stated research questions (Durotolu, 2001). The strength and viability of any research will be determined by the type of data collected and the method of collecting such data (Durotolu, 2001). The process of data collection in a research requires that the researcher plans carefully the type of data he intends to collect and the method of collecting such data (Durotolu, 2001). This implies that a researcher has to decide on the variables and the type of data that should be collected for such variables, the place where such data may be collected, and then the data collection instruments that should be used for the collection of such data (Durotolu (2001).

This research study utilizes a questionnaire as the main data collection instrument. The instrument was designed by the researcher for the purpose of collecting data from respondents. The questionnaire is the most common data-gathering instrument used by researchers (Issa, 2004). The research instrument is a 35-item questionnaire that seeks to know about respondents' utilization of e-banking services, preferences for available e-banking channels, and also to measure the satisfaction levels of respondents as a result of utilization of the available e-banking channels for transactions. The questionnaire is a self-administered one that enables the respondents to respond to the questions themselves by selecting answer options they best agree with. The questionnaire for this research study consists of four sections (A – D).

- Section A: Contains mostly close-ended questions on the socio-demographic attributes of the respondents, such as, gender, marital status, monthly income range, occupation, age category, and educational qualification. An open-ended question on the name of the Nigerian commercial bank respondent operates with is also included in section A.
- Section B: Contain close-ended questions on available e-banking services/channels in Nigerian commercial banks. Also contained in section B is the frequency of utilization of the e-banking channels as well as factors that influence customers' adoption and utilization of e-banking channels. Respondents are required to select only one answer from the multiple options provided. Some of the answer options are on a 5-point Likert scale that ranges from 1-Strongly Disagree to 5-Strongly Agree.
- Section C: Contain close-ended questions that seek to know the effectiveness of available e-banking channels. Respondents are expected to rate the effectiveness of e-banking channels they have used before for financial transactions on a 5-point Likert scale that ranges from 1-Very Ineffective to 5-Very Effective.
- Section D: This section contains close-ended questions that attempt to find out satisfaction levels of respondents as a result of utilization of available e-banking channels for transactions. Respondents are also expected to state their satisfaction levels on any e-banking channels they have used for transaction on a 5-point Likert scale that ranges from 1-Highly Dissatisfied to 5-Highly Satisfied. This section also contains open-ended questions on challenges of using e-banking services and suggested solutions or measures of countering the challenges.

The consent of bank managers representing each commercial bank in the bank managers' forum was first sought before their customers were included in the research study. The managers helped the researcher to also seek the consent of the customers who were selected as participants in the research study. The researcher sought the consent of selected customers from the bank where he works and administered questionnaires to them by himself. Selected customers from the other banks got questionnaires administered to them through the managers of the banks who were given the questionnaires at the monthly bank managers' forum which holds once in a month in the state. A total of 420 questionnaires were given to the managers for onward distribution to customers' who were selected using convenient sampling technique. The managers were instructed by the researcher to distribute the questionnaires to customers that are accessible and easily reached to fill and return same back after correctly and completely providing answers to the questions asked. A total of 420 questionnaires were given out to customers who were selected as respondents for the research survey. The researcher also did follow-ups by visiting the bank managers in their various offices to ensure that the questionnaires had been distributed to customers; and to collect those that have been correctly filled and returned. The researcher did not get any wrongly filled returned questionnaire from the respondents and as such there were no invalid returned questionnaires in the research, except for those that were not returned. Through this process, the researcher was able to retrieve back 379 completely and correctly filled questionnaires from respondents and as such was able to collate the data needed for the research study.

3.6. Data Analysis Techniques and Statistical Tools

The researcher in this sub-section gives a brief explanation of how data for the study is organized, presented, analyzed and interpreted. This sub-section also explains the statistical tools that are used in carrying out data analyses and test of hypotheses in the research study. The statistical tools employed for data analyses depend on the type and nature of data; that is, whether data is nominal, ordinal, interval or ratio type. The researcher used tables mostly to present data in this study, although pie charts were also used in some cases to show data pictorially. Data extracted from the returned filled questionnaires were properly organized through data coding, data cleaning and data entering. Data analyses carried out using the IBM-Statistical Package for the Social Sciences (SPSS) version 20.0.

The main statistical tools used in carrying out data analyses and test of hypotheses in this research study are as follows:

1. **Cronbach's Alpha test:** The Cronbach's Alpha is a measure of internal consistency and reliability (Eisinga et al., 2013; Cortina, 1993; Nunnally, 1978). It shows how closely related a set of variables or items are as a group. It also shows how reliable and consistent the questions in a survey questionnaire are (Tavakol et al., 2011; Cortina, 1993). Cronbach's Alpha is also a measure of scale reliability that helps to determine the internal consistency or reliability of items in a data collection instrument (Tavakol et al., 2011; Nunnally, 1978). The Cronbach's Alpha is mostly used when the researcher has multiple Likert-scale options in the data collection instrument, and when the researcher wishes to determine if the scales used in the instrument are ones that are reliable (Tavakol et al., 2011, Cortina, 1993). Cronbach's Alpha is also seen as a function of the number of items in a survey data collection instrument and the average inter-relationship between the items (Eisinga et al., 2013; Tavakol et al., 2011). The Cronbach's Alpha coefficient has its value in the range $0 \leq \text{Alpha} \leq 1$ (Tavakol et al., 2011; Cortina, 1993). Most researchers, as a rule of thumb, only accept a Cronbach's alpha value that is greater than or equal to 0.6; that is, ($\alpha \geq 0.6$). A Cronbach's Alpha coefficient that is less than 0.5 signifies an unacceptable reliability. A Cronbach's Alpha coefficient between 0.5 and 0.6 signifies a poor reliability. A coefficient between 0.6 and 0.7 signifies an acceptable reliability. A coefficient between 0.7 and 0.9 signifies a good reliability, while a coefficient greater than 0.9 signifies an excellent reliability (Eisinga et al., 2013; Tavakol et al., 2011; Cortina, 1993).
2. **Frequency/percentage Analyses:** Frequency/percentage distribution analysis enables the researcher to know the frequencies and percentages distributions of respondents' demographic information as well as frequencies/percentages distributions of responses to each of the technical questions asked in the questionnaire. This analysis enables the researcher to determine the highest and lowest frequencies/percentages of respondents' responses on the questions asked in the questionnaire (Freund et al., 1976). The frequencies are easily determined by taking counts of the number of respondents that selected each of the answer options of a particular question (Freund et al., 1976; Neter et al., 1992). The percentage is also determined in a similar manner. To determine the percentage of respondents that selected a particular answer option, the number of respondents that selected that option is divided by the total number of respondents that answered the question, then multiplied by 100. These information are then displayed in a table called the frequency/percentage distribution table (Freund et al., 1976; Neter et al., 1992).
3. **Spearman rank correlation Analysis:** The Spearman rank correlation is the non-parametric version of the Pearson product moment correlation. The Spearman rank correlation, like the Product moment correlation measures the strength of relationship or association between two variables whose data are either both ordinal, interval or ratio (McDonald, 2014; Freund et al., 1976). This implies that Spearman rank correlation is used when the data are non-numeric or when some of the assumptions of normality that would have required the use of the parametric Pearson moment correlation are grossly violated (Francis, 2004). The Spearman rank correlation formula is given as:

$$R = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

Where;

R = coefficient of rank correlation

n = number of bivariate pairs

d = difference in the ranks of paired observations of x and y (i.e. $r_x - r_y$) (Francis, 2004).

The spearman rank correlation coefficient is a value in the range $-1 \leq R \leq +1$ (McDonald, 2014; Freund, et al., 1976). A coefficient of ± 1 implies that there is a perfect relationship or association between the two variables (Freund et al., 1976; Francis, 2004). A negative coefficient indicates that the two variables move in opposite directions. That is, as one variable increases/decreases, the other decreases/increases (Freund et al., 1976; Francis, 2004). Likewise, a positive coefficient indicates that the two variables move in the same direction. That is, as one variable increases/decreases, the other also increases/decreases (Freund et al., 1976; Francis, 2004).

The Spearman rank correlation is used in this research study to determine the degree of relationship/association between utilization of available e-banking channels as independent variables and customer satisfaction as dependent variable.

4. **Chi-Square Goodness of fit Test:** The Chi-square goodness of fit test is a statistical test that is mostly applied when we have one categorical variable from a single population (Lunsford et al., 2010). It is used to determine whether in a sample there is a significant difference between observed frequencies and the frequencies we expect to obtain with a hypothesized distribution (Lunsford et al., 2010; Freund et al., 1976). If the difference between the observed and expected frequencies is large, the Chi-square value will be large; but if the difference between the observed and expected frequencies is small, the Chi-square test statistic value will be small (Freund et al., 1976). The Chi-square goodness of fit test is appropriate for use when each of the options in a categorical variable have the same chance of being selected, and when the population we are sampling from is large (at least 10 times larger than the sample) (Freund et al., 1976; Neter et al., 1992). The Chi-square goodness of fit test also requires the expected frequency for each of the options to have a minimum value of 5 (Freund et al., 1976; Neter et al., 1992). The Ch-

square goodness of fit formula is given as:

$$X^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Where;

X^2 = Chi-square test statistic

O_i = Observed frequency for the i^{th} level or option of the categorical variable

E_i = Expected frequency for the i^{th} level or option of the categorical variable (Neter et al., 1992; Freund et al., 1976).

The Chi-square goodness of fit test also depends on a quantity known as the number of degrees of freedom (Freund et al., 1976).

The number of degrees of freedom for this test statistic is given as: D.F. = $(k - 1)$, where k is the number of levels or options of the categorical variable (Neter et al., 1992; Freund et al., 1976).

The Chi square goodness of fit test is used in this research study to determine if the utilization of e-banking channels significantly improved customers' satisfaction based on responses from participants.

5. **Friedman Test:** The Friedman's test is the non-parametric alternative to the parametric repeated measures Analysis of Variance (ANOVA) which is employed when the same parameter has been measured under different conditions on the same subjects (Brahmia et al., 2014). This non-parametric statistical tool is used to determine whether group or treatment effects differ significantly in a randomized block design experiment when the data are not normally distributed or symmetric; or when the independent variable measured is ordinal (Siegel et al., 1998). The test is also mostly used when the dependent variable measured is continuous, and when the assumptions of normality for the utilization of the parametric repeated measure ANOVA are violated (Siegel et al., 1998). The Friedman's test statistic is approximately chi-squared distributed with an associated number of degrees of freedom (Brahmia et al., 2014; Siegel et al., 1998). The number of degrees of freedom is given as; number of treatments or groups minus one. That is, $(k - 1)$ (Siegel et al., 1998). The procedure for carrying out the Friedman's test involves the ranking of each row (also called block) together, and then considering the values of the ranks by columns. The Friedman's test statistic is computed using the formula:

$$Q = \frac{12}{NK(k+1)} \sum_{i=1}^k R_i^2 - 3N(k+1)$$

Where;

N = number of subjects

K = number of treatments or groups

R_i = sum of the ranks for the i^{th} treatment or group

(Brahmia et al., 2014; Siegel et al., 1998).

The Friedman's test is used in this research study to determine if there are statistical significant differences in customers' preferences for e-banking channels.

6. **Kruskal-Wallis Test:** The Kruskal-Wallis test (also called Kruskal-Wallis One-way Analysis of Variance by ranks) is a non-parametric statistical test used to compare three or more independent samples (McDonald, 2014; Green et al., 2008). It is used to test the null hypothesis that all the populations from which the samples were drawn have the same distribution functions against the alternative hypothesis that at least two of the independent samples differ with respect to their medians (McDonald, 2014; Green et al., 2008). This test is considered to be the non-parametric alternative to the parametric One-way Analysis of Variance test when the sample data violates the assumptions of normality (McDonald, 2014; Green et al., 2008). The test is used when the data involved is ordinal or when the data is continuous but violates the assumptions of normality for the One-way Analysis of Variance test to be employed (McDonald, 2014; Green et al., 2008). The test tries to determine if the population medians on a dependent variable are the same across all levels of a factor (Green et al., 2008). For the Kruskal-Wallis test to be carried out using the k independent samples procedure, the cases must be scored on an independent grouping variable and on a dependent variable (McDonald, 2014; Green et al., 2008). The dependent variable should also be one that is at least measured using the ordinal scale (McDonald, 2014; Green et al., 2008). The Kruskal-Wallis test statistic is computed using the formula:

$$H = \left[\frac{12}{N(N+1)} \sum \frac{T_c^2}{n_c} \right] - 3(N+1)$$

Where;

N = total number of all the groups combined together

T_c = rank total for each group

n_c = number of subjects in each group

The sampling distribution of H is approximately Chi-squared distributed with $(k - 1)$ degrees of freedom. Where k = number of groups or samples (Green et al., 2008).

The Kruskal-Wallis test is used in this research study to test the null hypothesis that there is no statistical significant difference in customers' preferences for e-banking channels across different educational levels and gender.

It is also worth stating here that, because of the volume and complexity of the data collected for the research study, the researcher used IBM - Statistical Package for the Social Sciences (IBM - SPSS) Version 20.0 in carrying out the data analyses and statistical tests.

3.7. Methodological Problems

Some of the methodological challenges or problems encountered by the researcher are pointed out in this sub-section. The challenges are:

The researcher was unable to get a comprehensive sampling frame for the population under investigation due to the fact that the population is very large and almost infinite. The unavailability of a comprehensive sampling frame hindered the researcher from utilizing a probability sampling technique such as simple random sampling or stratified random sampling which would have been more appropriate for a descriptive (quantitative) research design. The researcher relied solely on primary data because of the unavailability of secondary data that contains information about commercial banks customers. This would have helped the researcher in getting more factual and unbiased data about the customers, as most of the information about bank customers collected using questionnaires were not factual, erroneous, and biased. Also, because of the difficulty in getting a comprehensive sampling frame for the population under study, the researcher could not use any scientific method to determine an ideal or adequate sample size for the research study. This obviously has some negative effects on the precision and reliability of the findings of the research study.

3.8. Summary of Research Methodology

The researcher has been able to describe the research design, sources of data, research population and sample in this research study. Also discussed in this chapter are sampling technique used in selecting participants in the research study, research data collection instrument and how it was administered to participants, data analysis techniques/statistical tools used in analyzing the research data, and methodological problems. The methods and techniques discussed in this chapter if followed logically and correctly would give the researcher the necessary edge and support to provide valid answers to the research questions, and this will ultimately help the researcher in achieving the aim and objectives of the research study. A sample size of 420 was chosen by the researcher as adequate for executing the research. The researcher used a convenience sampling technique as the main sampling technique for selecting participants from the population, while the main data collection instrument was a questionnaire. The statistical tools used for data analysis in the research study are Cronbach's Alpha test, Frequency/Percentage analysis, Spearman rank correlation analysis, Chi-square goodness of fit test, Friedman's test, and Kruskal-Wallis test. Also, due to the volume of data collected for the study, the researcher employed the use of a computer statistical software package for data analyses and statistical tests. The IBM - Statistical Package for the Social Sciences (IBM - SPSS) Version 20.0 was used in carrying out data analyses and statistical tests.

4. Data Analysis and Presentation of Results

4.1. Introduction

In this chapter, the researcher presents the results and interpretations of the data analyses and statistical tests carried out using the data collected using the research questionnaires. The purpose of the analyses and statistical tests was to determine if there exists relationship between the independent variables and the dependent variable in the research study. These analyses and tests of hypotheses will help the researcher in achieving the stated objectives of the research study. Because of the volume and complexity of the data used in this research, the researcher utilized the IBM - Statistical Package for the Social Sciences (IBM - SPSS) Version 20.0 to carry out the data analyses and tests of hypotheses. It is also important to state that a total of 420 questionnaires were distributed out for this research, of which the researcher was able to get back 379 completely and correctly filled ones. This implies that the researcher got a response rate of 90.24%. This response rate of 90.24% is considered to be very good and hence allowing the researcher to use the data collate from the filled questionnaires for executing the research study. This also means that the researcher and other stakeholders can place strong reliance on the findings and conclusions of the research study. The level of significance (alpha) used for analyses and tests in this research study is 0.05 (5%).

4.2. Data Analysis and Findings

The data collected from participants using questionnaires are analyzed and findings are properly interpreted. The different analyses carried out in this research study were done with the support of IBM - Statistical Package for the Social Sciences (IBM - SPSS) version 20.0.

4.3. Cronbach's Alpha Reliability Analysis

The researcher used the Cronbach's Alpha reliability analysis to measure the reliability and consistency of the research data collection instrument and the research data collected using the instrument. As a rule of thumb in the Cronbach's alpha reliability analysis, an alpha value less than 0.7 signifies that the reliability and consistency of the data is not too good, while an alpha value of 0.7 and above implies that the reliability and consistency of the research instrument and data collected is good. The result of the Cronbach' alpha test carried out on the research data collection instrument and data collected for this research study.

Cronbach's Alpha	N of Items
0.80	33

Table 1: Cronbach's Alpha Reliability Test
Source: Field survey, 2015

Table 1 shows the result of the Cronbach's alpha test conducted in this research study. The Cronbach's alpha test returned a coefficient of 0.80 while measuring 33 items (variables) in the questionnaire. This implies that the variables used in the questionnaire and the data collected are sufficiently good, reliable and consistent. This also implies that all the items measuring the variables are good and acceptable.

4.4. Frequency/Percentage Analysis

The frequency/percentage analysis shows the distribution of participant’s demographic attributes as well as the distribution of their responses on questions asked in the questionnaire.

		Frequency	Percent
Valid	female	139	36.7
	Male	240	63.3
	Total	379	100.0

Table 2: Gender of Respondents
Source: Field survey, 2015

Table 2 shows the distribution of respondents’ gender. The table shows that 139(36.7%) of the respondents were females, while 240(63.3%) of the respondents were males. This implies that majority of the participants in the research were males. This is also an indication that most commercial bank customers in Nigeria are males. This information is also displayed pictorially using a pie chart.

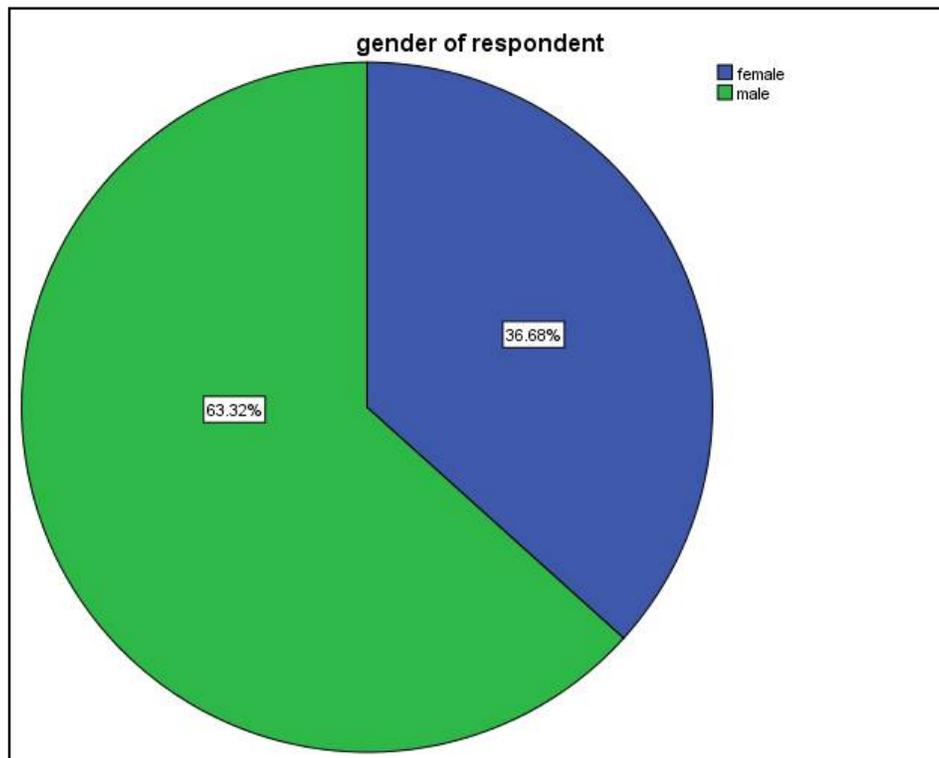


Figure 1: Gender distribution of respondents

		Frequency	Percent
Valid	Single	142	37.5
	married	200	52.8
	separated	18	4.7
	widowed	19	5.0
	Total	379	100.0

Table 3: Marital Status
Source: Field survey, 2015

Table 3 shows the distribution of the marital status of participants. The table shows that 142(37.5%) of the respondents are single, 200(52.8%) are married, 18(4.7%) are separated, while 19(5.0%) are widowed. This implies that majority of the participants in the research survey were married. This is also an indication that majority of the customers of commercial banks in Nigeria are married. This information is also displayed pictorially using a pie chart.

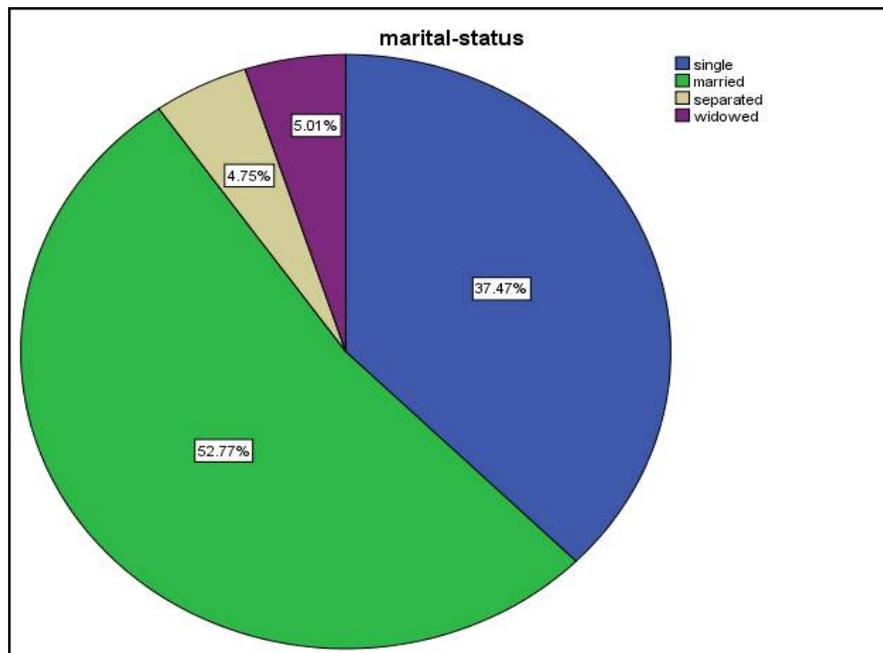


Figure 2: Marital-status distribution of respondents

		Frequency	Percent
Valid	above HND/Degree	92	24.3
	HND/Degree	195	51.5
	less than HND/Degree	92	24.3
	Total	379	100.0

Table 4: Educational Qualification
Source: Field survey, 2015

Table 4 shows the distribution of respondents' educational qualification. The table shows that 92(24.3%) of the respondents had above HND/Degree, 195(51.5%) had HND/Degree, while 92(24.3%) had less than HND/Degree. This implies that majority of the respondents that participated in the research survey had HND/Degree as their educational qualification. This could also imply that most people who operate accounts with commercial banks in Nigeria are learned people with at least HND or Degree. This is an indication that majority of commercial banks customers in Nigeria are people who are educated up to the HND/Degree level and as such expected to know about e-banking. This information is also shown pictorially using a pie chart.

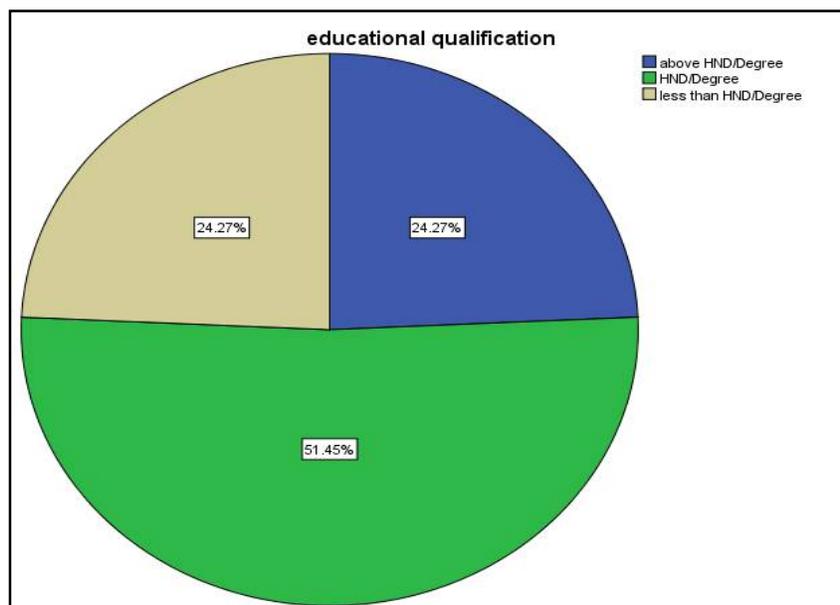


Figure 3: Educational qualification distribution of respondents

		Frequency	Percent
Valid	public servant	125	33.0
	private sector employee	101	26.6
	self-employed	118	31.1
	student/NYSC member	31	8.2
	Unemployed	4	1.1
	Total	379	100.0

Table 5: Occupation
Source: Field survey, 2015

Table 5 shows the occupational distribution of respondents. The table shows that 125(33.0%) of the respondents are public servants; 101(26.6%) are private sector employees; 118(31.1%) are self-employed; 31(8.2%) are students/NYSC members, while 4(1.1%) are unemployed. This implies that majority of the respondents that participated in the research survey were public servants. This is an indication that majority of commercial banks customers in Nigeria are public servants, and as such must have salary accounts with the banks. This information is also displayed pictorially using pie chart.

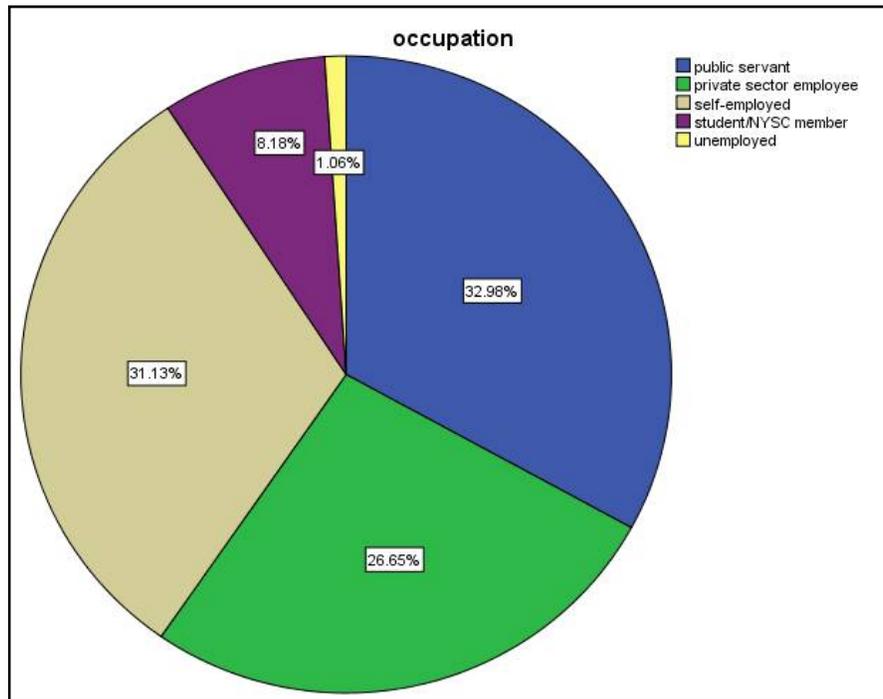


Figure 4: Occupational distribution of respondents

		Frequency	Percent
Valid	less than 20 years	5	1.3
	20-28 years	63	16.6
	29-37 years	123	32.5
	38-46 years	116	30.6
	47-55 years	64	16.9
	above 55 years	8	2.1
	Total	379	100.0

Table 6: Age Category
Source: Field survey, 2015

Table 6 shows the age distribution of respondents that participated in the research survey. The table shows that 5(1.3%) of the respondents were less than 20 years; 63(16.6%) were in the age category 20-28 years; 123(32.5%) were in the age category 29-37 years; 116(30.6%) were in the age category 38-46 years; 64(16.9%) were in the age category 47-55 years, while 8(2.1%) were above 55 years. This implies that majority of the respondents that participated in the research survey were in the age group 29-37 years. This is an indication that majority of commercial banks customers in Nigeria are young adults and as such should be in tune with ICT advancements. This information is displayed pictorially using a pie chart.

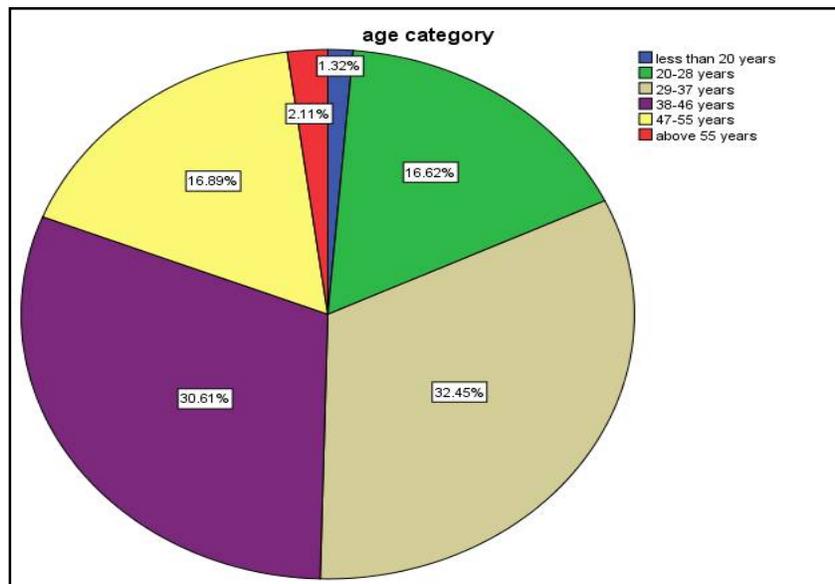


Figure 5: Age distribution of respondents

		Frequency	Percent
Valid	less than N100,000	209	55.1
	N100,000 - N199,999	117	30.9
	N200,000 - N299,999	28	7.4
	N300,000 - N399,999	14	3.7
	N400,000 - N499,999	11	2.9
Total		379	100.0

Table 7: Monthly Incomes of respondents
Source: Field survey, 2015

Table 7 shows the monthly income distribution of the respondents who participated in the research survey. The table shows that 209(55.1%) of the respondents had monthly income less than N100,000; 117(30.9%) had monthly income between N100,000-N199,999; 28(7.4%) had monthly income between N200,000-N299,999; 14(3.7%) had monthly income between N300,000-N399,999, while 11(2.9%) had monthly income between N400,000-N499,999. This implies that majority of the respondents that participated in the research survey had monthly income less than N100,000. This is an indication that majority of commercial banks customers in Nigeria are people with manageable incomes such as public servants, self employed individuals, students, and NYSC members.

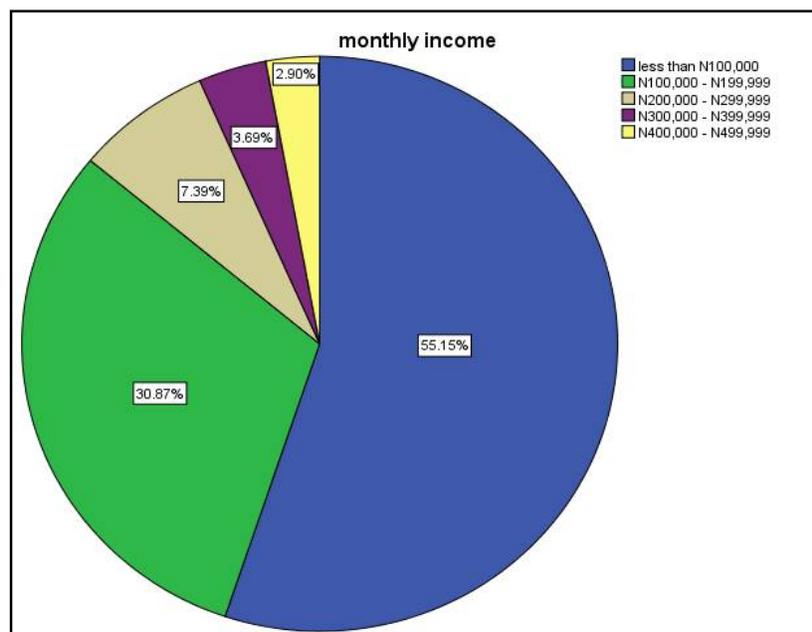


Figure 6: Monthly income distribution of respondents

		Frequency	Percent
Valid	Access	17	4.5
	CitiBank	18	4.7
	Diamond	18	4.7
	Ecobank	20	5.3
	Enterprise	16	4.2
	FBN	18	4.7
	FCMB	18	4.7
	Fidelity	18	4.7
	GTB	18	4.7
	Heritage	18	4.7
	Keystone	18	4.7
	Mainstreet	18	4.7
	Skye	17	4.5
	Stanbic	18	4.7
	standard chartered	18	4.7
	Sterling	18	4.7
	UBA	17	4.5
	Union	19	5.0
	Unity	17	4.5
	Wema	20	5.3
Zenith	20	5.3	
Total	379	100.0	

Table 8: Commercial Banks

Source: Field survey, 2015

Table 8 shows the distribution of returned completely and correctly questionnaires by banks. The table shows that Eco bank, Wema bank, and Zenith bank each returned 20 completely and correctly filled questionnaires, while the remaining 18 banks each returned between 16 - 18 completely and correctly filled questionnaires. This implies that majority of the banks returned 16 – 18 completely and correctly filled questionnaires for the research study.

		Frequency	Percent
Valid	Yes	205	54.1
	No	174	45.9
	Total	379	100.0

Table 9: Utilize internet banking

Source: Field survey, 2015

Table 9 shows the distribution of responses on whether respondents utilize internet banking. The table shows that 205(54.1%) of the respondents responded “yes”, they utilize internet banking, while 174(45.9%) responded “no”, they don’t use internet banking. This implies that majority of the respondents utilize internet banking channel for financial transactions.

		Frequency	Percent
Valid	Yes	372	98.2
	No	7	1.8
	Total	379	100.0

Table 10: Utilize Telephone/Mobile banking

Source: Field survey, 2015

Table 10 shows the distribution of responses on whether respondents utilize internet banking. The table shows that 372(98.2%) of the respondents responded “yes”, they utilize telephone/mobile banking, while 7(1.8%) responded “no”, they don’t use telephone/mobile banking. This implies that majority of the respondents utilize telephone/mobile banking channel for financial transactions.

		Frequency	Percent
Valid	Yes	379	100.0
	No	0	0.0
	Total	379	100.0

Table 11: Utilize ATM

Source: Field survey, 2015

Table 11 shows the distribution of responses on whether respondents utilize ATM. The table shows that 379(100.0%) of the respondents responded “yes”, they utilize ATM, while 0(0.0%) responded “no”, they don’t use ATM. This implies that all the respondents in this research study utilize ATM for financial transactions.

		Frequency	Percent
Valid	Yes	219	57.8
	No	160	42.2
	Total	379	100.0

*Table 12: Utilize POS Terminals
Source: Field survey, 2015*

Table 12 shows the distribution of responses on whether respondents utilize POS terminals. The table shows that 219(57.8%) of the respondents responded “yes”, they utilize POS terminals, while 160(42.2%) responded “no”, they don’t use POS terminals. This implies that majority of the respondents in this research study utilize POS terminals for financial transactions.

		Frequency	Percent
Valid	Yes	117	30.9
	No	262	69.1
	Total	379	100.0

*Table 13: Utilize Smart cards
Source: Field survey, 2015*

Table 13 shows the distribution of responses on whether respondents utilize smart cards. The table shows that 117(30.9%) of the respondents responded “yes”, they utilize smart cards, while 262(69.1%) responded “no”, they don’t use smart cards. This implies that majority of the respondents in this research study do not utilize smart cards for financial transactions.

		Frequency	Percent
Valid	Never	174	45.9
	Rarely	31	8.2
	Often	144	38.0
	Very Often	30	7.9
	Total	379	100.0

*Table 14: Frequency of usage of internet banking
Source: Field survey, 2015*

Table 14 shows the distribution of responses on the frequency of usage of internet banking by respondents. The table shows that 174(45.9%) of the respondents responded that they have “never” used internet banking for transaction before. 31(8.2%) responded they “rarely” used it; 144(38.0%) responded they “often” used it, while 30(7.9%) responded they “very often” used it. This implies that majority of the respondents in this research study have never used internet banking to carry out financial transactions before, while 38.0% of the respondents often used internet banking to carry out financial transactions.

		Frequency	Percent
Valid	Rarely	85	22.4
	Often	97	25.6
	Very Often	126	33.2
	Always	71	18.7
	Total	379	100.0

*Table 15: Frequency of usage of telephone/mobile banking
Source: Field survey, 2015*

Table 15 shows the distribution of responses on the frequency of usage of telephone/mobile banking by respondents. The table shows that 85(22.4%) of the respondents responded that they “rarely” used telephone/mobile banking to carry out banking transactions. 97(25.6%) responded that they “often” used it; 126(33.2%) responded that they “very often” used it, while 71(18.7%) responded that they “always” used it. This implies that majority of the respondents in this research study who used telephone/mobile banking channels for financial transactions very often used them.

		Frequency	Percent
Valid	Rarely	50	13.2
	Often	116	30.6
	Very Often	150	39.6
	Always	63	16.6
	Total	379	100.0

Table 16: Frequency of usage of ATM
Source: Field survey, 2015

Table 16 shows the distribution of responses on the frequency of usage of ATM by respondents. The table shows that 50(13.2%) of the respondents responded that they “rarely” used ATM to carry out banking transactions. 116(30.6%) responded that they “often” used ATM;150(39.6%) responded that they “very often” used ATM, while 63(16.6%) responded that they “always” used ATM. This implies that majority of the respondents in this research study who used ATM very often used them for financial transactions.

		Frequency	Percent
Valid	Rarely	96	25.3
	Often	137	36.1
	Very Often	112	29.6
	Always	34	9.0
	Total	379	100.0

Table 17: Frequency of usage of POS terminals
Source: Field survey, 2015

Table 17 shows the distribution of responses on the frequency of usage of POS terminals by respondents. The table shows that 96(25.3%) of the respondents responded that they “rarely” used POS terminals to carry out financial transactions. 137(36.1%) responded that they “often” used POS terminals;112(29.6%) responded that they “very often” used POS terminals, while 34(9.0%) responded that they “always” used POS terminals to carry out financial transactions. This implies that majority of the respondents in this research study who use POS terminals often use it for financial transactions.

		Frequency	Percent
Valid	Rarely	95	25.1
	Often	174	45.9
	Very Often	102	26.9
	Always	8	2.1
	Total	379	100.0

Table 18: Frequency of usage of Smart cards
Source: Field survey, 2015

Table 18 shows the distribution of responses on the frequency of usage of smart cards by respondents. The table shows that 95(25.1%) of the respondents responded that they “rarely” used smart cards to carry out financial transactions. 174(45.9%) responded that they “often” used smart cards;102(26.9%) responded that they “very often” used smart cards, while 8(2.1%) responded that they “always” used smart cards to carry out financial transactions. This implies that majority of the respondents in this research study who use smart cards often used them to carry out financial transactions.

		Frequency	Percent
Valid	Strongly Disagree	11	2.9
	Disagree	23	6.1
	Neutral	27	7.1
	Agree	268	70.7
	Strongly Agree	50	13.2
	Total	379	100.0

Table 19: AVAILABILITY is a factor that influence customers' adoption and utilization of e-banking products
Source: Field survey, 2015

Table 19 shows the distribution of responses on whether “Availability” was a factor that influenced customers’ adoption and utilization of e-banking products. The table shows that 11(2.9%) of the respondents “strongly disagree” that “Availability was a factor that influenced the adoption and utilization of e-banking products. 23(6.1%) of the respondents “disagree”; 27(7.1%) of the respondents were “neutral”; 268(70.7%) of the respondents “agree”, while 50(13.2%) of the respondents “strongly agree”. This

implies that majority of the respondents in this research study “agree” that “Availability” is a factor that influences customers’ adoption and utilization of e-banking products in Nigeria.

		Frequency	Percent
Valid	Disagree	24	6.3
	Neutral	48	12.7
	Agree	256	67.5
	Strongly Agree	51	13.5
	Total	379	100.0

Table 20: ACCESSIBILITY is a factor that influence customers' adoption and utilization of e-banking products
Source: Field survey, 2015

Table 20 shows the distribution of responses on whether “Accessibility” was a factor that influenced customers’ adoption and utilization of e-banking products. The table shows that 24(6.3%) of the respondents “disagree” that “Accessibility was a factor that influenced the adoption and utilization of e-banking products. 48(12.7%) of the respondents were “neutral”; 256(67.5%) of the respondents “agree”, while 51(13.5%) of the respondents “strongly agree”. This implies that majority of the respondents in this research study “agree” that “Accessibility” is a factor that influences customers’ adoption and utilization of e-banking products in Nigeria.

		Frequency	Percent
Valid	Disagree	127	33.5
	Neutral	98	25.9
	Agree	65	17.2
	Strongly Agree	89	23.5
	Total	379	100.0

Table 21: FEES & CHARGES is a factor that influence customers' adoption and utilization of e-banking products
Source: Field survey, 2015

Table 21 shows the distribution of responses on whether “Fees & charges” was a factor that influenced customers’ adoption and utilization of e-banking products. The table shows that 127(33.5%) of the respondents “disagree” that “Fees & Charges” was a factor that influenced the adoption and utilization of e-banking products. 98(25.9%) of the respondents were “neutral”; 65(17.2%) of the respondents “agree”, while 89(23.5%) of the respondents “strongly agree”. This implies that majority of the respondents in this research study “agree” that “Fees & Charges” is a factor that influences customers’ adoption and utilization of e-banking products in Nigeria.

		Frequency	Percent
Valid	Strongly Disagree	11	2.9
	Disagree	143	37.7
	Neutral	93	24.5
	Agree	132	34.8
	Total	379	100.0

Table 22: SPEED is a factor that influence customers' adoption and utilization of e-banking products
Source: Field survey, 2015

Table 22 shows the distribution of responses on whether “Speed” was a factor that influenced customers’ adoption and utilization of e-banking products. The table shows that 11(2.9%) of the respondents “strongly disagree” that “Speed” was a factor that influenced the adoption and utilization of e-banking products. 143(37.7%) of the respondents “disagree”; 93(24.5%) were “neutral”, while 132(34.8%) of the respondents “agree”. This implies that majority of the respondents in this research study “agree” that “Speed” is a factor that influences customers’ adoption and utilization of e-banking products in Nigeria.

		Frequency	Percent
Valid	Disagree	4	1.1
	Neutral	79	20.8
	Agree	232	61.2
	Strongly Agree	64	16.9
	Total	379	100.0

Table 23: SECURITY is a factor that influence customers' adoption and utilization of e-banking products
Source: Field survey, 2015

Table 23 shows the distribution of responses on whether “Security” was a factor that influenced customers’ adoption and utilization of e-banking products. The table shows that 4(1.1%) of the respondents “disagree” that “Security” was a factor that influenced the adoption and utilization of e-banking products. 79(20.8%) of the respondents were “neutral”; 232(61.2%) of the respondents “agree”, while 64(16.9%) of the respondents “strongly agree”. This implies that majority of the respondents in this research study “agree” that “Security” is a factor that influences customers’ adoption and utilization of e-banking products in Nigeria.

		Frequency	Percent
Valid	Disagree	41	10.8
	Neutral	109	28.8
	Agree	194	51.2
	Strongly Agree	35	9.2
	Total	379	100.0

Table 24: PRIVACY is a factor that influence customers' adoption and utilization of e-banking products

Source: Field survey, 2015

Table 24 shows the distribution of responses on whether “Privacy” was a factor that influenced customers’ adoption and utilization of e-banking products. The table shows that 41(10.8%) of the respondents “disagree” that “Privacy” was a factor that influenced the adoption and utilization of e-banking products. 109(28.8%) of the respondents were “neutral”; 194(51.2%) of the respondents “agree”, while 35(9.2%) of the respondents “strongly agree”. This implies that majority of the respondents in this research study “agree” that “Privacy” is a factor that influences customers’ adoption and utilization of e-banking products in Nigeria.

		Frequency	Percent
Valid	Strongly Disagree	4	1.1
	Disagree	46	12.1
	Neutral	129	34.0
	Agree	145	38.3
	Strongly Agree	55	14.5
	Total	379	100.0

Table 25: IT AWARENESS is a factor that influence customers' adoption and utilization of e-banking products

Source: Field survey, 2015

Table 25 shows the distribution of responses on whether “IT awareness” was a factor that influenced customers’ adoption and utilization of e-banking products. The table shows that 4(1.1%) of the respondents “strongly disagree” that “IT awareness” was a factor that influenced the adoption and utilization of e-banking products. 46(12.1%) of the respondents “disagree”; 129(34.0%) were “neutral”; 145(38.2%) of the respondents “agree”, while 55(14.5%) of the respondents “strongly agree”. This implies that majority of the respondents in this research study “agree” that “IT awareness” is a factor that influences customers’ adoption and utilization of e-banking products in Nigeria.

		Frequency	Percent
Valid	Ineffective	7	1.8
	Neutral	25	6.6
	Effective	139	36.7
	very effective	34	9.0
	Total	205	54.1
Missing	System	174	45.9
Total		379	100.0

Table 26: Effectiveness of internet banking

Source: Field survey, 2015

Table 26 shows the distribution of responses on the effectiveness of internet banking by respondents that have ever used it in carrying out financial transactions. The table shows that 7(1.8%) of the respondents were of the opinion that it was “ineffective”. 25(6.6%) of the respondents were “neutral”; 139(36.7%) were of the opinion that it was “effective”; 34(9.0%) of the respondents were of the opinion that it was “very effective”, while 174(45.9%) of the respondents indicated that they don’t use internet banking. This implies that majority of the respondents in this research study are of the opinion that internet banking is effective in carrying out financial transactions.

		Frequency	Percent
Valid	Very Ineffective	2	.5
	Ineffective	44	11.6
	Neutral	39	10.3
	Effective	229	60.4
	Very Effective	65	17.2
	Total	379	100.0

Table 27: Effectiveness of telephone/mobile banking

Source: Field survey, 2015

Table 27 shows the distribution of responses on the effectiveness of telephone/mobile banking by respondents that have ever used it in carrying out financial transactions. The table shows that 2(0.5%) of the respondents were of the opinion that it was “very ineffective”. 44(11.6%) of the respondents were of the opinion that it was “ineffective”; 39(10.3%) of the respondents were “neutral”; 229(60.4%) were of the opinion that it was “effective”, while 65(17.2%) of the respondents were of the opinion that it was “very effective”. This implies that majority of the respondents in this research study is of the opinion that telephone/mobile banking is effective in carrying out financial transactions.

		Frequency	Percent
Valid	Ineffective	40	10.6
	Neutral	34	9.0
	Effective	233	61.5
	Very Effective	72	19.0
	Total	379	100.0

Table 28: Effectiveness of ATM

Source: Field survey, 2015

Table 28 shows the distribution of responses on the effectiveness of ATM by respondents that have ever used it in carrying out financial transactions. The table shows that 40(10.6%) of the respondents were of the opinion that it was “ineffective”. 34(9.0%) of the respondents were “neutral”; 233(61.5%) of the respondents were of the opinion that it was “effective”, while 72(19.0%) of the respondents were of the opinion that it was “very effective”. This implies that majority of the respondents in this research study are of the opinion that the ATM is an effective channel for carrying out financial transactions.

		Frequency	Percent
Valid	Ineffective	35	9.2
	Neutral	27	7.1
	Effective	125	33.0
	very effective	32	8.4
	Total	219	57.8
Missing	System	160	42.2
Total		379	100.0

Table 29: Effectiveness of POS terminal

Source: Field survey, 2015

Table 29 shows the distribution of responses on the effectiveness of POS terminals by respondents that have ever used it in carrying out financial transactions. The table shows that 35(9.2%) of the respondents were of the opinion that it was “ineffective”. 27(7.1%) of the respondents were “neutral”; 125(33.0%) of the respondents were of the opinion that it was “effective”; 32(8.4%) of the respondents were of the opinion that it was “very effective”, while 160(42.2%) indicated that they have never used POS before and therefore cannot rate the effectiveness. This implies that majority of the respondents in this research study that have used POS terminals before are of the opinion that it is an effective channel for carrying out financial transactions.

		Frequency	Percent
Valid	Ineffective	13	3.4
	Neutral	20	5.3
	Effective	63	16.6
	very effective	21	5.5
	Total	117	30.9
Missing	System	262	69.1
Total		379	100.0

Table 30: Effectiveness of Smart card

Source: Field survey, 2015

Table 30 shows the distribution of responses on the effectiveness of POS terminals by respondents that have ever used it in carrying out financial transactions. The table shows that 13(3.4%) of the respondents were of the opinion that it was “ineffective”. 20(5.3%) of the respondents were “neutral”; 63(16.6%) of the respondents were of the opinion that it was “effective”; 21(5.5%) of the respondents were of the opinion that it was “very effective”, while 262(69.1%) of the respondents indicated that they have never used smart cards before and therefore cannot rate the effectiveness. This implies that majority of the respondents in this research study that use smart cards are of the opinion that it is an effective channel for carrying out financial transactions.

		Frequency	Percent
Valid	Dissatisfied	35	9.2
	Neutral	13	3.4
	Satisfied	131	34.6
	Highly Satisfied	32	8.4
	Total	211	55.7
Missing	System	168	44.3
Total		379	100.0

Table 31: Satisfaction level with internet banking
Source: Field survey, 2015

Table 31 shows the distribution of respondents’ satisfaction level with internet banking. The table shows that 35(9.2%) of the respondents indicated that they were “dissatisfied” with using internet banking for financial transactions. 13(3.4%) of the respondents were “neutral”; 131(34.6%) of the respondents indicated that they were “satisfied”; 32(8.4%) of the respondents indicated that they were “highly satisfied”, while 168(44.3%) of the respondents did not indicate their satisfaction levels because they do not use it for financial transactions. This implies that majority of the respondents that utilize internet banking for financial transactions are satisfied with it.

		Frequency	Percent
Valid	Highly Dissatisfied	11	2.9
	Dissatisfied	66	17.4
	Neutral	12	3.2
	Satisfied	196	51.7
	Highly Satisfied	94	24.8
	Total	379	100.0

Table 32: Satisfaction level with telephone/mobile banking
Source: Field survey, 2015

Table 32 shows the distribution of respondents’ satisfaction level with telephone/mobile banking. The table shows that 11(2.9%) of the respondents indicated that they were “highly dissatisfied” with using telephone/mobile banking for financial transactions. 66(17.4%) of the respondents indicated that they were “dissatisfied”; 12(3.2%) were “neutral”; 196(51.7%) of the respondents indicated that they were “satisfied”, while 94(24.8%) of the respondents indicated that they were “highly satisfied”. This implies that majority of the respondents that utilize telephone/mobile banking for financial transactions are satisfied with it.

		Frequency	Percent
Valid	Dissatisfied	45	11.9
	Neutral	29	7.7
	Satisfied	258	68.1
	highly satisfied	47	12.4
	Total	379	100.0

Table 33: Satisfaction level with ATM
Source: Field survey, 2015

Table 33 shows the distribution of respondents’ satisfaction level with ATM. The table shows that 45(11.9%) of the respondents indicated that they were “dissatisfied” with using ATM for financial transactions. 29(7.7%) of the respondents were “neutral”; 258(68.1%) of the respondents indicated that they were “satisfied”, while 47(12.4%) indicated that they were “highly satisfied”. This implies that majority of the respondents that utilize ATM for financial transactions are satisfied with it.

		Frequency	Percent
Valid	Dissatisfied	35	9.2
	Neutral	32	8.4
	Satisfied	96	25.3
	highly satisfied	56	14.8
	Total	219	57.8
Missing	System	160	42.2
Total		379	100.0

Table 34: Satisfaction level with POS terminal
Source: Field survey, 2015

Table 34 shows the distribution of respondents' satisfaction level with POS terminals. The table shows that 35(9.2%) of the respondents indicated that they were "dissatisfied" with using POS for financial transactions. 32(8.4%) of the respondents were "neutral"; 96(25.3%) of the respondents indicated that they were "satisfied; 56(14.8%) indicated that they were "highly satisfied", while 160(42.2%) of the respondents did not indicate their satisfaction levels because they have never used POS terminal to carry out financial transactions before. This implies that majority of the respondents that utilize POS terminals for financial transactions are satisfied with it.

		Frequency	Percent
Valid	Dissatisfied	24	6.3
	Neutral	30	7.9
	Satisfied	45	11.9
	highly satisfied	18	4.7
	Total	117	30.9
Missing	System	262	69.1
Total		379	100.0

Table 35: Satisfaction level with Smart card
Source: Field survey, 2015

Table 35 shows the distribution of respondents' satisfaction level with smart cards. The table shows that 24(6.3%) of the respondents indicated that they were "dissatisfied" with using smart cards for financial transactions. 30(7.9%) of the respondents were "neutral"; 45(11.9%) of the respondents indicated that they were "satisfied; 18(4.7%) indicated that they were "highly satisfied", while 262(69.1%) of the respondents did not indicate their satisfaction levels because they have never used smart cards to carry out financial transactions before. This implies that majority of the respondents that utilize smart cards for financial transactions are satisfied with it.

4.5. Spearman Rank Correlation Analysis

The researcher used the spearman rank correlation analysis to determine if there is a relationship as well as the strength of the relationship (if a relationship exists) between utilization of e-banking channels and customer satisfaction. The output of the analyses also shows the significant values (P-values) of the correlation coefficients.

E-banking channels	Correlation Coefficient	Sig.(P) Value (2-tailed)
Internet banking	0.265	0.000
Telephone/mobile banking	0.608	0.000
ATM	-0.156	0.002
POS terminal	0.220	0.001
Smart card	0.376	0.000

Table 36: Summary of output for Spearman Rank Correlation analyses between utilization of e-banking channels and customer satisfaction

Source: SPSS Correlation analysis output for Field data, 2015

Table 36 shows summary of the output for Spearman Rank Correlation Analyses carried out to determine if there significant relationship between e-banking channels and customer satisfaction. The correlation results enabled the researcher to take decision concerning the following hypothesis:

H04: "There is no statistical significant relationship between utilization of e-banking channels and customer satisfaction".

From table 36, it can be observed that all the correlations are significant at the 0.05 (5%) level of significance because their P-values are all less than 0.05. This implies that there is a statistical significant relationship between utilization of e-banking channels and customer satisfaction in Nigerian commercial banks.

4.6. Friedman Test for Significant Difference

The Friedman's test is used in this research study to test for significant differences in customers' preferences for the identified e-banking channels. The test helps in providing evidence that will enable the researcher to take decision on whether customers' preferences for the e-banking channels are the same or they significantly different for each of the e-banking channels. This test helps to test the null hypothesis:

H01: "There is no statistical significant difference in customers' preferences for e-banking channels".

→ Friedman Test SPSS Output

	Mean Rank
Effectiveness of internet banking	3.28
Effectiveness of telephone/mobile banking	2.84
Effectiveness of ATM	3.09
Effectiveness of POS	2.93
Effectiveness of smart card	2.86

Table 37: Mean Ranks for customers' rating (Preferences) for each e-banking channel

Source: SPSS Friedman test output for Field data, 2015

Test Statistics ^a	
N	107
Chi-Square	11.113
Df	4
Asymp. Sig.	.025
a. Friedman Test	

Table 38: Friedman Test Statistics

Source: SPSS Friedman test output for Field data, 2015

Table 37 shows the mean ranks of respondents' preferences for the e-banking channels. From the table it can be observed that internet banking had the highest mean preference rank of 3.28, followed by ATM with mean rank of 3.09. Telephone/mobile banking had the least mean rank of 2.84. The Friedman test attempts to test if there is a significant difference in customers preferences for these e-banking channels based on the effectiveness ratings of the channels by respondents.

Table 38 shows the SPSS output of the Friedman test conducted. From the table, it is observed that the Friedman test returned a Chi-square value of 11.113, with 4 degrees of freedom; and a sig value of 0.025. This implies that, at 0.05 (5%) level of significance the null hypothesis of no significant difference must be rejected. In other words, there is a statistical significant difference in customers' preferences for the e-banking channels.

4.7. Kruskal-Wallis Test

The Kruskal-Wallis test is used in this research study to determine if there is a significant difference in customers' preferences for e-banking channels based on educational backgrounds and gender. The test helps in providing evidence that will enable the researcher to take decision on whether customers' preferences for e-banking products are the same across the different educational backgrounds/qualifications and gender or if they are significantly different across the different educational backgrounds and gender. The Kruskal-Wallis test helps to test the following null hypotheses:

H02: "There is no statistical significant difference in customers' preferences for e-banking channels across different educational levels".

H03: "There is no statistical significant difference in customers' preferences for e-banking channels based on gender difference".

	Educational Qualification	N	Mean Rank
Effectiveness of internet banking	above HND/Degree	86	99.66
	HND/Degree	91	107.22
	less than HND/Degree	28	99.55
	Total	205	
Effectiveness of telephone/mobile banking	above HND/Degree	92	181.97
	HND/Degree	195	197.74
	less than HND/Degree	92	181.61
	Total	379	
Effectiveness of ATM	above HND/Degree	92	190.40
	HND/Degree	195	194.20
	less than HND/Degree	92	180.70
	Total	379	
Effectiveness of POS	above HND/Degree	89	113.10
	HND/Degree	89	103.92
	less than HND/Degree	41	116.48
	Total	219	
Effectiveness of smart card	above HND/Degree	63	59.15
	HND/Degree	44	57.42
	less than HND/Degree	10	65.00
	Total	117	

Table 39: Mean ranks for respondents' preferences across different Educational Qualifications
Source: SPSS Kruskal-Wallis test output for Field data, 2015

Test Statistics^{a,b}					
	Effectiveness of internet banking	Effectiveness of telephone/mobile banking	Effectiveness of ATM	Effectiveness of POS	Effectiveness of smart card
Chi-Square	1.214	2.601	1.252	1.813	.492
Df	2	2	2	2	2
Asymp. Sig.	.545	.272	.535	.404	.782
a. Kruskal Wallis Test					
b. Grouping Variable: educational qualification					

Table 40: Kruskal-Wallis Test Statistics (Preferences by Educational Qualification)
Source: SPSS Kruskal-Wallis test output for Field data, 2015

Table 39 shows the mean ranks of respondents' preferences for the e-banking channels across different educational qualifications. From the table it can be observed that telephone/mobile banking and ATM had the highest mean preference ranks across the different educational qualifications, while smart card had the least mean ranks. The Kruskal-Wallis test attempts to test if there is a significant difference in customers' preferences across different educational qualifications for these e-banking channels based on their preferences for the channels. Table 40 shows the SPSS output of the Kruskal –Wallis test. From the table, it can be observed that the Kruskal-Wallis test returned the following results for each e-banking channel:

	Internet Banking	Telephone/Mobile Banking	ATM	POS	Smart card
Chi-Sqr	1.214	2.601	1.252	1.813	0.492
D.F.	2	2	2	2	2
P- Value	0.545	0.272	0.535	0.404	0.782

Table 41: Summary of Kruskal-Wallis test results
Source: SPSS Kruskal-Wallis test output for Field data, 2015

Since all the P-values are greater than 0.05, it implies that the null hypothesis (H02) cannot be rejected at the 0.05 (5%) level of significance. In other words, there is no statistical significant difference in customers' preferences for the e-banking channels across the different educational qualifications.

	gender of respondent	N	Mean Rank
Effectiveness of internet banking	Female	42	114.13
	Male	163	100.13
	Total	205	
Effectiveness of telephone/mobile banking	Female	139	201.88
	Male	240	183.12
	Total	379	
Effectiveness of ATM	Female	139	204.35
	Male	240	181.69
	Total	379	
Effectiveness of POS	Female	84	109.42
	Male	135	110.36
	Total	219	
Effectiveness of smart card	Female	23	74.15
	Male	94	55.29
	Total	117	

Table 42: Mean ranks for respondents' preferences across different gender
Source: SPSS Kruskal-Wallis test output for Field data, 2015

Test Statistics^{a,b}					
	Effectiveness of internet banking	Effectiveness of telephone/mobile banking	Effectiveness of ATM	Effectiveness of POS	Effectiveness of smart card
Chi-Square	2.727	3.348	4.962	.014	6.868
Df	1	1	1	1	1
Asymp. Sig.	.099	.067	.026	.906	.009
a. Kruskal Wallis Test					
b. Grouping Variable: gender of respondent					

Table 43: Kruskal-Wallis Test Statistics (Preferences by Gender)
Source: SPSS Kruskal-Wallis test output for Field data, 2015

Table 42 shows the mean ranks of respondents' preferences for the e-banking channels across gender. From the table it can be observed that telephone/mobile banking and ATM had the highest mean preference ranks across the different gender (male/female), while smart card had the least mean ranks. The Kruskal-Wallis test attempts to test if there is a significant difference in customers' preferences across different gender (male/female) for these e-banking channels based on their preferences for the channels. Table 43 shows the SPSS output of the Kruskal –Wallis test. From the table, it can be observed that the Kruskal-Wallis test returned the following results for each e-banking channel:

	Internet banking	Telephone/mobile banking	ATM	POS	Smart card
Chi-Sqr	2.727	3.348	4.962	0.014	6.868
D.F.	1	1	1	1	1
P- Value	0.099	0.067	0.026	0.906	0.009

Table 44: Summary of Kruskal-Wallis test results
Source: SPSS Kruskal-Wallis test output for Field data, 2015

From table 44, it is observed that the P-values for internet banking, telephone/mobile banking, and POS are all greater than 0.05, while the P-values for ATM and smart card were both less than 0.05. This implies that the null hypothesis (H03) concerning internet banking, telephone/mobile banking, and POS cannot be rejected at the 0.05 (5%) level of significance. In other words, there is no statistical significant difference in customers' preferences for internet banking, telephone/mobile banking, and POS across the different gender (male/female). On the other hand, it implies that the null hypothesis (H03) concerning ATM and smart card will be rejected at the 0.05 (5%) level of significance. In other words there is a statistical significant difference in customers' preferences for ATM and smart card across the different gender (male/female).

4.8. Chi-Square Goodness of Fit Test

The Chi-square goodness of fit test is used in this research study to test for statistical significance on whether utilization of e-banking

channels has significantly improved customers' satisfaction. The test helps in providing evidence that will enable the researcher to take decision on whether customers' satisfaction has improved as a result of utilizing the e-banking channels. This test helps to test the null hypothesis:

H05: "Utilization of e-banking channels has not significantly improved customers' satisfaction".

Test Statistics					
	satisfaction level with utilization of internet banking	satisfaction level with utilization of telephone/mobile banking	satisfaction level with utilization of ATM	satisfaction level with utilization of POS	satisfaction level with utilization of smart card
Chi-Square	160.166 ^a	305.340 ^b	377.084 ^c	47.685 ^d	13.769 ^e
Df	3	4	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.003
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 52.8.					
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 75.8.					
c. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 94.8.					
d. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 54.8.					
e. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 29.3.					

Table 45: Chi-Square tests results

Source: SPSS Chi-Square test output for Field data, 2015

From table 45, it is observed that the test returned the following Chi-square values 160.166, 305.340, 377.084, 47.685, and 13.769 for satisfaction with utilizing internet banking, telephone/mobile banking, ATM, POS, and smart card respectively. It can also be observed that all the P-values returned for these Chi-square values are less than 0.05. This implies that the null hypothesis (H05) will be rejected at the 0.05 (5%) level of significance. In other words, utilization of e-banking channels for financial transactions by customers has significantly improved their satisfaction levels.

4.9. Challenges of Electronic Banking and Measures to Counter Challenges

Based on responses of the respondents, the researcher was able to analyze their responses using simple frequency and percentage analysis.

S/N	Responses	Frequency	Percentage (%)
1.	Absence of appropriate/proper legal and regulatory framework for e-banking	43	11.35
2.	Limit on the amount of cash to be withdrawn or transferred; and wrong debits (As with ATM and internet banking where account is debited but cash is not dispensed nor beneficiary accounted credited for transfer).	58	15.30
3.	Lack of robust security measures to safe-guard e-banking channels against fraudsters and hackers gaining access to customers' accounts.	45	11.87
4.	Insufficient e-banking infrastructures for public use. Example, ATM and POS terminals.	67	17.68
5.	High fees/charges associated with using of e-banking channels for transactions	28	7.39
6.	Unavailability of e-banking channels due to power challenge, network down time, and system failure	62	16.36
7.	Absence of internet facilities in most homes due to high set-up cost	37	9.76
8.	Low knowledge/awareness of ICT and their benefits by bankers and customers	39	10.29
	Total	379	100.00

Table 46: Constraints/Challenges of e-banking in Nigeria

Source: Field survey, 2015

Table 46 shows the distribution of suggested challenges of e-banking in Nigeria. The researcher got diverse suggested challenges which were eventually classified into eight key challenges. The paramount among these challenges is the issue of insufficient e-

banking infrastructures for public use. This was followed by the issue of unavailability of e-banking channels due to power failure, network downtime, and system/hardware failure. Other paramount challenges are the issue of limits placed on the amount of cash to be withdrawn/cash transfer with ATM and other internet transfer platforms, as well as wrong debits (ATM debiting a customer's account without dispensing cash or beneficiary account not credited for online transfer). Lack of robust security measures in place to safe-guard e-banking channels against fraudsters and hackers was also another paramount challenge.

S/N	Responses	Frequency	Percentage (%)
1.	Robust Legal and Regulatory framework for e-banking should be implemented by the regulatory authorities as this will give customers the confidence in using e-banking channels for financial transactions.	43	11.35
2.	Regulatory authorities and managements of banks should review the limit placed on cash withdrawals from ATM and online funds transfer to enable customers withdraw their desired amounts from ATM and also transfer their desired amounts online. Managements of banks should also look into the issue of wrong debits by ATM and online transfers by deploying robust software that reverses such debits within the shortest period of time.	58	15.30
3.	Robust security measures to safe-guard e-banking channels from fraudulent people and hackers should be put in place.	45	11.87
4.	Managements of commercial banks in Nigeria should give high priority to ICT by investing more funds for acquisition and deployment of more e-banking channels so that customers could easily have access to these channels in their immediate environments.	67	17.68
5.	Regulatory authorities and banks should also reduce the high fees/charges associated with using e-banking channels for transactions as this will encourage more customers to utilize these channels for financial transactions.	28	7.39
6.	Managements of banks should acquire robust power backup appliances to tackle the issue of frequent power outage. Backup network links should also be acquired and configured to work in a manner that will allow the network to automatically switch to the backup link in the event of network down time so that customers can carry out transactions without hitches. Backup systems should also be acquired in case of unexpected system failure.	62	16.36
7.	Government should encourage the importation of low-priced computer systems that the common man can afford from technologically advanced countries so that more Nigerians would be able to own computer systems. Government should also ensure that the cost of Internet facilities/subscription is slashed down to enable the common man acquire it. These will enable most customers to carry out certain e-banking transactions in their homes by themselves without going to the bank.	37	9.76
8.	Managements of banks should also create more ICT awareness/knowledge for their employees by providing free and regular ICT training for them. Customers too should endeavour to update and train themselves on ICT so as to acquire more ICT knowledge/awareness that would enable them meet up with global ICT advancements and challenges.	39	10.29
Total		379	100.00

Table 47: Suggested measures/solutions to counter challenges of e-banking in Nigeria

Source: Field survey, 2015

Table 47 shows the distribution of suggested measures by respondents on how to minimize or counter the identified challenges of e-banking in Nigeria. The researcher also classified these measures into eight key measures. The paramount among these measures is

that 'managements of commercial banks in Nigeria should give high priority to ICT by allocating more funds for acquisition and deployment of more e-banking channels for public use within their immediate environments'. This was also followed by 'managements of banks should acquire robust power backup appliances, backup network link, and backup systems to tackle the issue of frequent electrical power outage, network down time, and unexpected system failure to enable customers carry out financial transactions without hitches'. Another very important measure is that 'regulatory bodies and managements of commercial banks should review the issue of limits placed on amounts to be withdrawn from ATM and online funds transfers, as well as acquiring and deploying robust software that can easily detect wrong debits and reverse such within the shortest possible time'. Another paramount measure is for the regulatory body and the banks to put in place robust security measures to help safe-guard e-banking channels against fraudsters and hackers gaining access to customers' accounts.

4.10. Summary of Data Analysis and Presentation of Results

The researcher was able to carry out data analyses and statistical tests on the research data using the statistical tools described in chapter three. The researcher carried out these data analyses and tests using IBM-SPSS version 20.0. The output of the analyses and tests were also carefully interpreted by the researcher. A total of 420 questionnaires were given out to participants while the researcher was able to retrieve back a total of 379 completely and correctly filled questionnaires from participants. This implies that the researcher was able to get a response rate of 90.24 percent.

5. Discussion, Conclusion, and Recommendations

5.0. Introduction

This chapter brings to light discussion and summary of major findings in the study. The researcher also drew conclusions based on the major findings in chapter four, recommendations on the possible ways forward to improve e-banking and customer satisfaction in Nigeria as well as recommendations on areas for further research studies. The discussion was based on the study objectives and research questions as shown below:

5.1. Discussion

It was found in this research study that the e-banking services/channels available in Nigerian commercial banking sector were internet banking, telephone/mobile banking, ATM, POS terminal, and smart card. These e-banking services are similar to those found out in the research studies of Balogun et al. (2013), Attah-Botchwey et al. (2014), Namugerwa (2013), Puopiel (2014), and Izogo et al. (2012).

The researcher found some of the factors that influence customers' adoption and utilization of e-banking services in Nigeria. These factors are; availability, accessibility, fees/charges, speed of transaction, security, privacy, and IT knowledge/awareness. These factors found by the researcher to influence customers' adoption and utilization of e-banking services in Nigeria are similar to the ones found in the research studies of Ahmad et al. (2011), Attah-Botchwey et al. (2014), Nakanjakko (2012), Ogunlowore et al. (2014), and Puopiel (2014).

The researcher found that there was a significant difference in customers' preferences for e-banking services. From the Friedman analysis carried out it was found that internet banking and ATM had higher mean ranks than the other e-banking channels, and when tested for significance the Friedman test revealed that there was a significant difference in customers' preferences for these e-banking services. This finding is consistent with the findings of Attah-Botchwey et al. (2014), Izogo et al. (2012), Puopiel (2014), Namugerwa (2013), and Nakanjakko (2012) who also suggested that there was a significant difference in customers' preferences for e-banking services.

The researcher also found that there was no significant difference in customers' preferences for e-banking services across different educational qualifications. This finding is contrary to the finding in the research study of Izogo et al. (2012) who in their own research study found that all the e-banking channels had significant relationship with educational qualification. The researcher also found that there was no significant difference in customers' preferences for internet banking, telephone/mobile banking, and POS terminal across gender; while preferences for ATM and smart card showed a statistical significant difference across gender. This finding is also close to that of Izogo et al. (2012) who found that there was no significant relationship between e-banking channels and gender.

The researcher also found that there was a significant relationship between utilization of e-banking channels and customer satisfaction in Nigeria. This finding was indicated by the spearman rank correlation analysis. The analysis showed the correlation coefficients and significant values for the correlation/relationship between each e-banking product and customer satisfaction. The correlation analysis result showed a statistical significance for each e-product and customer satisfaction at the 5% level of significance (that is, their P values were all less than 0.05). This finding is consistent with the findings of Balogun et al. (2013), Ogunlowore et al. (2014), and Napur (2010), who also found that there was significant relationship between e-banking and customer satisfaction. The finding is also similar to that of Nakanjakko (2012), who found a relationship, but weak positive relationship between e-banking and customer satisfaction. This finding is not in harmony with the findings of Namugerwa (2013), who found no significant relationship between e-banking and customer satisfaction.

The researcher also found that utilization of e-banking products has significantly improved customers satisfaction in Nigeria. This finding was indicated from the results of the Chi-square test for independence. The results showed statistical significance at 5% for each e-banking product because the P values from the analysis for each e-banking product were all less than 0.05. This finding is in harmony with the findings of Balogun et al. (2013), Nakanjakko (2012), and Sharma (2012) who also found that e-banking has

significantly improved customers' satisfaction. The finding is however contrary to the findings of Bello (2005) and Namugerwa (2013) who in their own studies found that e-banking has not significantly improved customers' satisfaction.

The researcher also found that the major challenges customers experienced with e-banking services in Nigeria were:

- Absence of legal/regulatory framework for e-banking services in Nigeria.
- Limit placed on cash withdrawals and online transfers using e-banking.
- Lack of robust security measures for e-banking channels
- Insufficient e-banking channels for public use. Example, ATM and POS.
- High fees/charges associated with using e-banking services.
- Unavailability of e-banking services due to power, network, and system failures.
- Absence of internet facilities in most homes due to high setup cost.
- Low knowledge/awareness of ICT and their benefits by bankers and customers.

These challenges are similar to the challenges found in the research studies of Attah-Botchwey et al. (2014) and Puopiel (2014).

The researcher also found some measures/solutions to minimize or eliminate some of the challenges customers experienced with utilization of e-banking services in Nigeria. The measures/solutions suggested by customers are:

- Robust Legal and Regulatory framework for e-banking should be implemented by the regulatory authorities as this will give customers the confidence in using e-banking channels for financial transactions.
- Banks and regulatory authorities should review the limit placed on cash withdrawals from ATM and online funds transfer to enable customers withdraw their desired amounts from ATM and also transfer their desired amounts online. Managements of banks should also look into the issue of wrong debits by ATM and online transfers by deploying robust software that reverses such debits within the shortest period of time.
- Robust security measures to safe-guard e-banking channels from fraudulent people and hackers should be put in place.
- Commercial banks in Nigeria should give high priority to ICT by allocating more funds for acquisition and deployment of more e-banking channels so that customers could easily have access to these channels in their immediate environments.
- Regulatory authorities and banks should also reduce the high fees/charges associated with using e-banking channels for transactions as this will encourage more customers to utilize these channels for financial transactions.
- Banks should acquire robust power backup appliances to tackle the issue of frequent power outage. Backup network links should also be acquired and configured to work in a manner that will allow the network to automatically switch to the backup link in the event of network down time so that customers can carry out transactions without hitches. Backup systems should also be acquired in case of unexpected system failure.
- Government should encourage the importation of low-priced computer systems that the common man can afford from technologically advanced countries so that more Nigerians would be able to own computer systems. Government should also ensure that the cost of Internet facilities/subscription is slashed down to enable the common man acquire it. These will enable most customers to carry out certain e-banking transactions in their homes by themselves without going to the bank.
- Banks should also create more ICT awareness/knowledge for their employees by providing free and regular ICT training for them. Customers, on the other hand should endeavour to also get up to date ICT training to acquire more ICT knowledge/awareness that would enable them meet up with global ICT advancements and challenges.

These suggested measures/solutions on how to eliminate or reduce the challenges of e-banking in Nigeria are similar to the suggested measures in the research studies of Attah-Botchwey et al. (2014) and Puopiel (2014).

5.2. Conclusion

The purpose of this research study is to identify and evaluate available e-banking services/channels in Nigeria; to find out factors that influence customers' adoption and utilization of e-banking products, and to determine if e-banking has improved customer satisfaction. Electronic banking tends to improve customer satisfaction and guarantee better efficiency in the operations of commercial banks. This research study showed that customers of commercial banks in Nigeria utilize e-banking products such as ATM, internet banking, telephone/mobile banking, POS terminals, and smart cards. Customers get certain benefits from the utilization of these products, principally time saving, easy access to cash any time of the day, security, privacy, ease and convenience to carry out financial transactions. Customers however, showed preference for ATM and internet banking among the available e-banking channels in Nigeria because of their availability, accessibility, effectiveness, user friendliness, and ease to use. Furthermore, customers prefer these e-banking products because of the security features they possess which are used to protect unauthorized persons from gaining access to customers' accounts. There was no significant difference in customers' preference for e-banking channels across educational qualifications and gender; however there was a significant difference in the preference for ATM and smart card by gender as the research result showed that female customers had preference for ATM and smart cards than male customers, which may be due to the ease and less technicalities in using the products. There was also a significant relationship between utilization of e-banking channels and customers' satisfaction. The study also showed that e-banking has significantly improved customers' satisfaction in Nigeria. This will in the short/long run induce intense competition among banks to quest for more robust technologies in e-banking services, which will also help increase or retain their customer base. The researcher also discovered that despite the benefits of e-banking, it is associated with a lot of challenges. The study shows that insufficient e-banking infrastructures for public use, example ATM and POS terminals, and unavailability of the e-banking channels due to power failure, network downtime, and system failure are the paramount challenges facing customers using e-banking products in Nigeria. However, several measures were suggested by respondents on how

to counter these challenges associated with e-banking. The paramount measures suggested were; management of commercial banks in Nigeria should give high priority to ICT by investing more funds for the acquisition of deployment of e-banking infrastructures at strategic places for public use. Management of banks should acquire robust power backup appliances to tackle the issue of power failure. Backup network links should also be acquired and configured to work in a manner that allows the network to automatically switch over to the backup switch whenever the main network link goes down. Backup systems should also be available to replace any system that goes down unexpectedly.

5.3. Recommendations

Based on the findings of the research study, the researcher is making the following recommendations which would help commercial banks in Nigeria to be more robust and remain in the banking business. Based on the study findings the researcher recommends the following:

Banks should consider customer sensitization about the available e-banking services. That is, when to use the products, type of transactions to use the products for, and how to use the products. Banks should also sensitize customers on the availability, accessibility, reliability, and security of these e-banking products.

Banks should also carry out advertisement of these e-banking products and their benefits using mass media so as to be able to reach a good percentage of bank customers who may not be aware of the existence of these products. This may even attract potential customers to the banks.

Banks should also enact Legal and Regulatory frameworks for e-banking in Nigeria, as this will give customers the confidence in using e-banking channels for financial transactions. Banks should also review upwards the limit placed on cash withdrawals from ATM and online funds transfer to enable customers withdraw their desired amounts from ATM and also transfer their desired amounts online.

Banks should also look into the issue of wrong debits by ATM and online transfers by deploying robust software that reverses such debits within the shortest period of time, as this will also enthrone confidence in the customers to utilize e-banking products for their financial transactions.

Banks and regulatory authorities should also look into the issue of high fees/charges for utilizing e-banking services. A reduction or complete waiver should be made on these e-banking charges so as to attract more customers to using the products for financial transactions.

Banks should also create more ICT awareness/knowledge for their employees by providing free and regular ICT training for them. Customers, on the other hand should also acquire up to date ICT training to increase their ICT knowledge/awareness. This will enable them meet up with global ICT advancements and challenges.

The researcher is also recommending for further studies the following areas of research:

- Electronic banking and customer adoption in Nigeria
- Electronic banking and commercial banks performance in Nigeria
- Relationship between Educational level and customer's adoption of e-banking

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APPENDIX 1

Survey Questionnaire for a Research on Electronic-Banking and Customer Satisfaction in Nigeria: An Empirical Investigation.**Important Information about the Questionnaire**

- The purpose of this survey is to gather information and views from commercial bank customers on the utilization, effectiveness, preferences, and level of satisfaction with available e-banking channels used for banking transactions in Nigeria.
- The questionnaire scales some of the answer options on a 5-point Likert scaleranging from “Strongly Disagree” to “Strongly Agree”, and others from “Highly Effective” to Highly Ineffective”.
- You are please required to complete this questionnaire by ticking the option that best suites you.
- The information collected will be used for academic research only and under no circumstance will unauthorized persons or your bankers have access to the information and responses you supply us with. All responses are collected from respondents anonymously in such a way that no individual will be identified.
- The researcher shall ensure that privacy and confidentiality are maintained with any information provided to us by respondents.

➤ Section A: Respondent’s Demographic Information

Instructions: You are kindly requested to tick just one option as it relates to you.

1. Gender : (1.) Male (2.) Female
2. Marital Status: (1.) Single (2.) Married (3.) Divorced (4.) Separated (5.) Widowed
3. Educational Qualification: (1.) Above HND/Degree (2.) HND/Degree (3.) Less than HND/Degree
4. Occupation: (1.) Public Servant (2.) Private sector employee (3.) Self-employed (4.) Student/NYSC member (5.) Unemployed
5. Age Category: (1.) Less than 20 years (2.) 20-28 years (3.) 29-37 years (4.) 38-46 years (5.) 47-55 years (6.) Above 55 years
6. Monthly Income: (1.) Less than N100,000 (2.) N100,000-N199,999 (3.) N200,000-N299,999 (4.) N300,000-N399,999 (5.) N400,000-N499,999 (6.) N500,000 and above
7. Which Bank do you operate with? -----

➤ Section B: Views on Available E-Banking Channels in Nigeria

8. The following e-banking products have been identified as available channels for e-banking transactions in Nigeria. Kindly tick the ones you have ever used or still use for transactions.
(1.) Internet banking [] (2.) Telephone/mobile banking [] (3.) ATM [] (4.) POS [] (5.) Web merchant []
9. Kindly indicate how frequent you use the available e-banking channels for transactions.

Question No.	Question	1	2	3	4	5
1.	Internet banking					
2.	Telephone/mobile banking					
3.	ATM					
4.	POS					
5.	Smart Card					

Key: 1 – Never, 2 – Rarely, 3 – Often, 4 – Very Often, 5 – Always

Factors that influence adoption and utilization of e-banking products

10. Instructions: You are kindly requested to tick just one answer option for each question. Tick the option that you best agree with.

Question No.	Question	1	2	3	4	5
1.	Availability					
2.	Accessibility					
3.	Fees and charges					
4.	Speed					
5.	Security					
6.	Privacy					
7	Information Technology awareness					

Key: 1 – Strongly Disagree, 2 - Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree

The following factors are believed to influence customers’ adoption and utilization of e-banking products. Indicate your level of agreement on each of the factors.

➤ SECTION C: Effectiveness Of Available E-Banking Channels In Nigeria

11. Instructions: You are kindly requested to tick just one answer option for each question. Tick the option that suites you best.

Question No.	Question	1	2	3	4	5
1.	Internet banking					
2.	Mobile/telephone banking					
3.	ATM					
4.	POS					
5.	Smart Card					

Key: 1 – Very Ineffective, 2 - Ineffective, 3 – Neutral, 4 – Effective, 5 – Very Effective

How effective are the following e-banking services/channels in Nigeria?

➤ SECTION D: Satisfaction Level With Utilizing The Available E-Banking Channels.

12. Instructions: Please tick just one answer option to indicate your satisfaction level with the utilization of the available e-banking channels in Nigeria.

Indicate your satisfaction level with using the following e-banking channels in Nigeria

No.	Information Technology Tools/Infrastructures	1	2	3	4	5
1.	Internet Banking					
2.	Mobile/Telephone Banking					
3.	ATM					
4.	POS Terminal					
5.	Smart Card					

Key: 1 – Highly Dissatisfied, 2 - Dissatisfied, 3 – Neutral, 4 – Satisfied, 5 – Highly Satisfied

13. What are some of the identified challenges of utilizing e-banking products in Nigeria?

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14. What are you recommending as measures to counter or minimize these identified challenges?

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