



# E-Banking System and Financial Performance in Nigerian Banking Sector



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**Abstract:** *In today's competitive global environment, technology is an essential element of a bank's success and overall growth. Consequently, profitability and performance can be significantly hindered by high levels of challenges experienced in the work environment and this necessitated the adoption of technology. The study evaluates the effect of electronic banking system on the performance of commercial banks. The study adopted a qualitative approach to explore the subject matter. The findings shows that electronic banking plays a vital role in deepening performance and profitability of most banks. Electronic banking has huge prospects considering the various forms through which it can be used to encourage customer patronage and lessen the burden faced by customers in the banking hall. Hence, the advent of technology has reshaped operations and established efficiency across board. From the literature, it was observed that any organization that is not willing to embrace the prospects of technology most especially banks may find it difficult to match the high volume of competition and may eventually be forced out of business. Electronic banking has numerous opportunities to earn profit if rightly designed to meet the prevailing challenges and expectations of customers. The study recommended that banks must be focused in terms of their needs and using the right technology to achieve goals, rather, than acquiring technology of internet banking because other banks have it. Government participation in ensuring focused telecommunication industry must be visible to reduce or remove avoidable costs of implementing e-commerce and internet.*

**Keywords:** Customers, E-Banking, Efficiency, Performance, Profitability, Technology

## Introduction

The world has witnessed an information and technological revolution. According to Siam (2012) this revolution has touched every aspect of people's life including banking. Such changes and development have impacts on services quality, future of banking activities, and consequently, it is continually competition ability in the world markets since going along with technology is one of the most important factors of economic organizations success in general and banks in particular. This motivates banks to spend more on technology and information to achieve maximum returns and attracting large number of clients. Furthermore, banks have to provide an excellent service to customers who are sophisticated and will not accept less than above average service. Thus, the issue of service marketing in general, and banking services in particular has become one of the most important and modern directions which have witnessed a substantial expansion during the last years in almost all societies.

This is because the increasingly significant role which banking services have with the widening and variety that these services are characterized with, thus banking services have touched most aspects of contemporary societies life and activities (Stevens, 2002).

The banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. Information and communication technology (ICT) is at the center of this global change curve of electronic banking system today. Stevens (2002) asserted that banks have over the time been using electronic and telecommunication networks for delivering a wide range of value added products and services, managers in banking industry cannot ignore information systems because they play a critical impact in current banking system, they point out that the entire cash flow of most fortune banks are linked to information system. The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness banking. According to Sumra et al. (2011), introduction of electronic banking has revolutionized and redefined the ways banks were operating and the number of banks that offer financial services over the internet is increasing rapidly. Technology is now considered as the main contribution for the organizations' success and as their core competencies. So the banks be it domestic or foreign are investing more on providing services to their customers with the new technologies through e-banking, mobile banking, ATM, electronic funds transfer, account to account transfer, paying bills online, online statements and credit cards etc. are the services provided by banks. By using transactional websites, customers can check account balances, transfer funds, pay (and perhaps receive) bills, apply for loans, and perform a variety of other financial transactions without leaving their home or place of business. Banking through internet is considered as a complimentary delivery channel for the services rather than a substitute for the brick and mortar banking branches.

ATM banking is one of the earliest and widely adopted e-banking services in Nigeria (Nwankwo, et al. 2009). However, according to an annual report by Central Bank of Nigeria, its adoption and usage has been surpassed by mobile banking in the last few years (CBN, 2012). The tremendous increase in number of people adopting M-banking has been attributed to ease of use and high number of mobile phone users. This is consistent with the theory of consumer choice and demand as conceptualized in Agu and Kauffman (2008) in relation to mobile payments. There is also a growing partnership in financial institution and non-financial service providers where consumers through use of e-banking and other e-commerce services such as M-banking can transact and clear utility bills through shared banks' electronic platforms.

Therefore, this study is an attempt to examine the effect of online banking on the performance of commercial banks.

Electronic banking has produced changes in the structure of bank income. As a result of increased competition that has lowered margins in lending operations. Banks have diversified their sources of income and rely increasingly on income from fees services rather than interest rate spreads. Fees charged for services include typical banking activities like payment transactions, safe custody and account administration. These activities are, in general, less volatile than fees and commissions charged on activities which are affected by economic and cyclical developments. According to Malhotra and Singh (2004), banking through e-banking

has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labor intensive method with automated processes thus leading to higher performance and profitability.

Samuel (2006) investigated the role of electronic banking services on the profits of Nigerian banks. He investigated the reasons behind providing electronic banking services through the internet and their impact on banking services in general and banks profitability. He concluded that the effect of electronic banking services on banks profitability is negative in the short run because of costs and the investments the bank carry in order to have the technical and electronic infrastructure in place, training the employees to be skilled and competent but will be positive on the long run. Davenport (2003) and Oshikoya (2007) and Jean-Azam (2006) suggest that investment in ICT requires complementary investments in skills, organization innovation. Investment and change entails risks and costs which might reduce bank profits in the short run.

Studies by Kariuki (2005) showed the positive impacts of ICT on their banking performance using bank market growth and profits as measure of performance. He established that banks those with high profit growth are more likely to be using greater numbers of advanced ICTs. He concluded that e-banking leads to higher profits though in long-term but not in short-term due to high ICT investment cost. Kingoo (2011) investigated the relationship between e-banking and financial performance of commercial banks in. The study was conducted in the 43 commercial banks in Nigeria.

Despite the potential benefits of ICT and e-commerce, there is still debate about whether and how their adoption improves bank performance. Several attempts have been made to investigate the effect of electronic banking on bank performance. All these studies used profit and turnover as measures of bank performance as well number of cards issued and customers signed up in the e-banking platform. The study sought to fill the gap by assessing the effect of electronic banking on financial performance of commercial banks by the use of other relative measure such as profitability and market growth.

Following this introduction, the rest of the paper is organized as follows. Section two makes a review of the literature, section three presents the data and methodology used for the study. Section four contains data presentation, results and discussions. Conclusion and recommendations featured in section five.

## **Literature Review**

Electronic Banking according to Okoegwale (2012) is providing of banking and financial services via an internet device. It has to do with the ability to carry out banking and stock market dealings and also the ability to carry out some specific account functions. And it is popularly referred to in Nigeria as E-Banking, it entails checking of balance, transactions, payment. This is made possible by internet application. E-Banking in Nigeria began, when customers began to carry out transactions via the internet. Now almost all the Nigerian Banks practice this form of service which were mostly only accessible in the banking hall. Electronic banking has a significant role to play in the financial activity in Nigeria according to Enhancing Financial Innovation & Access (2010), which is an organization, a promoter of financial inclusion in Nigeria. The internet seems to be the most feasible means of providing another form of Branch Banking in Nigeria to a wider population with its ability to deliver services at any point in time and any place, (Arumugam 2008) agrees with this.

Irrespective of how good it might seem, interoperability seems to be the basic shortcomings that seem to still befall it, that is; the capacity for a service, piece of equipment etc., to be operated by different forces or groups. This is as a result of the rapid increase in technology which determines how efficient certain internet applications will work. Another pitfall is in the Application distribution for Electronic Banking, some banks are faced with Challenges in this aspect, while some futuristic Banks are revamping and reducing their over reliance on the settings of mobile phone operators. Given that customers' mobile devices are fixed to a particular setting, mostly which favours entertainment, it is not aligned to that which supports the electronic banking application. The Nigerian banks hoping to gain head way must have their eyes set above the operator's settings which might not be exact or slow in its arrival, or may not necessarily be available.

It would be advisable for banks seeking competitive advantage to make available a scenario where customers can download or have this internet application on their devices over-the-air or through some designated places without necessarily having to come to the bank, this would go a long way to boost the availability and wide spread of this form of banking.

Electronic banking or e-banking refers to an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution (Ombati, 2011). E-banking is also the use of electronic means to deliver banking services, mainly through the Internet. The term is also used to refer to ATMs, telephone banking, use of plastic money, mobile phone banking and electronic funds transfers.

According to Abaenewe, Ogbulu and Ndugbe (2013), electronic banking is the conduct of banking business electronically which involves the use of information communication technology to drive banking business for immediate and future goals. Electronic banking system is seen to be an innovative service delivery mode that offers diversified financial services like cash withdrawal, funds transfer, cash deposits, payment of utility and credit card bills, cheque book requests, and other financial enquiries, (Onyedimekwu & Oruan, 2013).

Similarly, Imiefoh (2012) sees electronic banking as an umbrella term for the process by which a customer perform banking transactions electronically without visiting a brick-and-mortar institutions. That is, automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels.

Electronic banking generally implies a service that allows customers to use some forms of computer to access account-specific information and possibly conduct transactions from a remote location like home or workplace, (Odulaja, 2012).

Elisha (2012) suggested e-banking has become popular because of its convenience and flexibility, and also transaction related benefits like speed, efficiency, accessibility and so on. He described e-banking as the term used for new age banking system, it could also be called online banking and it is called online banking and it is an outgrowth of PC banking. That is, a banking which includes the systems that enable financial institution customers, individuals or businesses, to access accounts transacts business, or obtains information on financial products or services through a public or private network, including the internet or mobile phone. Further, electronic banking is referred to as the process of using the internet as delivery mode for the provision of services like opening a deposit account,, electronic payment bill payments, and online transfers. These services can either be provided by the banks having physical offices or by creating a web site and providing services through that or services can be provisioned through a virtual bank as well. The internet is used as strategic and differentiating channel to offer high valued financial services and complex products at the

same time or improved quality at lower costs without physical boundaries and to cross sell products like credit cards and loans (Elisha, 2012).

### **Types of E-banking**

According to Elisha (2012), the following are the various forms of electronic banking:

#### **a. Mobile/SMS Banking**

Mobile Banking refers to provision and availing of banking and financial services with the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, to administer accounts and to access customized information. According to Meute (2010), mobile Banking consists of three inter-related concepts: mobile accounting, mobile brokerage and mobile financial information services. With mobile technology banks can offer a variety of services to their customers such as doing funds transfer while traveling, receiving online updates of stock price or even performing stock trading while being stuck in traffic. Smart phones and 3G connectivity provide some capabilities that older text message-only phones do not (Shan, 2006).

#### **b. Telephone Banking**

Telephone banking is a service provided by a financial institution, which allows its customers to perform transactions over the telephone (Vila et al., 2013). Most telephone banking services use an automated phone answering system with phone keypad response or voice recognition capability. To guarantee security, the customer must first authenticate through a numeric or verbal password or through security questions asked by a live representative.

With the obvious exception of cash withdrawals and deposits, it offers virtually all the features of an automated teller machine: account balance information and list of latest transactions, electronic bill payments, funds transfers between a customer's accounts, etc. Usually, customers can also speak to a live representative located in a call center or a branch, although this feature is not always guaranteed to be offered 24/7. In addition, telephone banking representatives are usually trained to do what was traditionally available only at the branch: loan applications, investment purchases and redemptions, checkbook orders, debit card replacements, change of address, etc.

#### **c. Electronic funds transfers**

Electronic funds transfer or EFT is the electronic exchange or transfer of money from one account to another, either within a single financial institution or across multiple institutions, through computer-based systems (Bahia, 2007). Electronic Funds Transfer (EFT) is also a system of transferring money from one bank account directly to another without any paper money changing hands. One of the most widely-used EFT programs is Direct Deposit, in which payroll is deposited straight into an employee's bank account, although EFT refers to any transfer of funds initiated through an electronic terminal, including credit card, ATM, and point-of-sale (POS) transactions. It is used for both credit transfers, such as payroll payments, and for debit transfers, such as mortgage payments.

According to Bahia (2017), transactions are processed by the bank through the Automated Clearing House (ACH) network. The growing popularity of EFT for online bill payment is paving the way for a paperless universe where checks, stamps, envelopes, and paper bills are obsolete. The benefits of EFT include reduced administrative costs, increased efficiency, simplified bookkeeping, and greater security. However, the number of companies who send and receive bills through the Internet is still relatively small.

**d. Self Service (PC) Banking**

Self-service banking for consumers and small business owners, enabling users to perform many routine functions at home by telephone, or cable modem connection. Home banking, also called on-line banking or PC banking, gives consumers an array of convenient services: they can move money between accounts, pay bills, check balances, and buy and sell mutual funds and securities. They can also look up loan rates and see if they qualify for a credit card or mortgage.

**e. POS Banking (Credit and Debit cards)**

It is a system that uses a computer terminal located at the point of sales transaction so that the data can be captured immediately by the computer system. It is also a retail payment system that substitutes an electronic transfer of funds for cash, cheques or drafts in the purchase of retail goods and services (Gerlach, 2011). In a POS system, sales and payment information are collected electronically, including the amount of the sale, the date and place of the transaction, and the consumer's account number. If the transaction is done on a bank credit or debit card, the payment information is passed on to the financial institution or payment processor, and the sales data is forwarded to the retailer's management information system for updating of sales records. According to Gerlach (2000), much of the actual processing volume is for credit card sales.

**f. Internet banking**

Internet banking, sometimes called online banking, is an outgrowth of PC banking (Egland et al., 2008). Internet banking uses the Internet as the delivery channel by which to conduct banking activity, for example, transferring funds, paying bills, viewing checking and savings account balances, paying mortgages, and purchasing financial instruments and certificates of deposit. An Internet banking customer accesses his or her accounts from browser software that runs Internet banking programs.

**g. ATMs**

An automated teller machine (ATM), also known as a automated banking machine (ABM) or Cash Machine is a computerized telecommunications device that provides the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank teller. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip that contains a unique card number and some security information such as an expiration date. According to Thompson (1997), Authentication is provided by the customer entering a personal identification number (PIN). Using an ATM, customers can access their bank accounts in order to make cash withdrawals, credit card cash advances, and check their account balances as well as purchase prepaid cell phone credit.

**h. Interactive TV Banking**

TV-Banking has to do with exploiting the television' banking service delivery channel. The commercial applications that can be further built on top of this platform could enable users to perform T-Commerce activities such as paying for teleshopping and making bill payments (Vila et al., 2013).

**i. Branchless Banking**

Branchless banking is a distribution channel strategy used for delivering financial services without relying on bank branches. While the strategy may complement an existing bank branch network for giving customers a broader range of channels through which they can

access financial services, branchless banking can also be used as a separate channel strategy that entirely forgoes bank branches (Thompson, 2014). Examples of branchless banking technologies are the Internet, automated teller machines (ATMs), POS devices and mobile phones. Each of these technologies serve to deliver a set of banking services and are part of distribution channels that may be used either separately or in conjunction to form the overall distribution channel strategy.

For example, most banks uses the Internet, ATMs, POS devices, EFTPOS devices, and mobile phones as technologies to deliver its banking services through a combination of distribution channels including stationary bank branches, mobile bank branches, ATMs, bank agents, Online banking, and mobile banking. All these are distribution channels, yet only the last four are branchless distribution channels and strategy (Access Bank refers to its branchless banking channels as alternate delivery channels)

### **Risks of E-Banking**

Electronic banking is faced by a number of risks for example:

**i. Operational risk** - The reliance on new technology to provide services makes security and system availability the central operational risk of electronic banking. Security threats can come from inside or outside the system, so banking regulators and supervisors must ensure that banks have appropriate practices in place to guarantee the confidentiality of data, as well as the integrity of the system and the data (International Monetary Fund, 2012).

**ii. Reputational risk** - Breaches of security and disruptions to the system's availability can damage a bank's reputation. The more a bank relies on electronic delivery channels, the greater the potential for reputational risks. If one electronic bank encounters problems that cause customers to lose confidence in electronic delivery channels as a whole or to view bank failures as system wide supervisory deficiencies, these problems can potentially affect other providers of electronic banking services. In order to manage such risks measures should be put in place to oblige the Directors and senior management to document and explain the strategic decisions of how the bank will develop their e-banking services. Management supervision should surround security control infrastructure; safeguard the e-banking systems and data from internal and external threats (Carlson and Lang, 2001). The security challenges of e-banking services are greater than those of conventional banking services. These challenges can be addressed through establishment of relevant authorization privileges and authentication measures, clear audit trail for e-banking transactions and put up measures to preserve confidentiality of e- banking information. (Ombati et al 2011).

### **Electronic Banking on Financial Performance**

Commercial banks assaulted by the pressure of globalization and competition from non-banking functions must find new ways to add value to the services. The question “what drives performance?” is at the top in understanding superior performance and hence striving for it. Substantial research efforts have gone into addressing this question, starting from the strategic level and going down to operational details. Customers in developing economies seems to keep the “technological factors” of services as the yardstick in differentiating good & bad services and the human factor – the employees seem to play a lesser role in discriminating the quality of service for banks. The variation in services offered by the banks develops the excellence for service quality. Banking is no longer regarded as a business dealing with money transaction alone, but it also seem as a business related to information on financial transaction (Padwal 2015). As electronic banking is becoming more prevalent, so level of customer satisfaction is also changing the scenario of technological environment. Informational technology in form of e-banking plays a significant role in providing better

services at lower cost. Several innovative IT based services such as Automated Teller Machines (ATM), Internet banking, Smart cards, Credit Cards, Mobile banking, Phone banking, Anywhere-Anytime banking have provided a number of convenient services to the customer so as the service quality improves, the probability of customer satisfaction increases. Increase in customer satisfaction in turn increases the mutual understanding, customer retention and a bond of trust between the customer and bank. The banks which are providing these services at large extent to customers are more reputed in the eyes of customers. But at the same time technology based product is different in public and private sector banks.

E-banking is an improvement over traditional banking system because it has reduced the cost of transaction processing, improved the payment efficiency, financial services and the banker-customer relationship. The relationship between e-banking and service quality can be studied with the level of satisfaction. The customer satisfaction is the function of customer expectation level and service quality level provided by the organization. E-banking plays a pivotal role in giving satisfaction to the customers because e-banking fills the gap between the expected and perceived service quality. So in order to fill this gap, banks should find ways of making electronic services more accessible and by allowing the customer to verify the accuracy of the e-banking transactions. On the whole we can say that e-banking has become pre-imminent method of carrying the banking transaction and increase the customer satisfaction (Sathye, 2015).

Siam (2016) stated that, banks are using the Internet as a strategic weapon, leveraging it as a distribution channel to offer complex products at the same quality they can provide from their physical branches, at a lower cost, to more potential customers, without boundaries. The online channel enables banks to offer low-cost, high value-added financial services and also benefit from the promotional opportunity to cross sell products such as credit cards and loans. In saving time and money for users, banks offer online banking as a less expensive alternative to branch banking. In addition, on-line banking enables banks to acquire information on consumer habits and preferences, for later marketing purposes. An expanding customer base and transaction cost savings are major benefits for banks (Siam, 2006).

According to Malhotra and Singh (2004), banking through internet has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labor intensive methods with automated processes thus leading to higher productivity and profitability. However, to date researchers have produced little evidence regarding these potential changes. Nonetheless, recent empirical studies indicate that internet banking is not having an independent effect on banking profitability, although these findings may change as the use of the internet becomes more widespread. More recently, a wider array of financial products and services have become available over the internet (Malhotra and Singh, 2014), which has thus become an important distribution channel for a number of banks. Banks boost technology investment spending strongly to address revenue, cost and competitiveness concerns. For some activities, banks hope to see a near-term impact on profitability. Other investments are motivated more by a desire to establish a competitive position or avoid falling behind the competition.

Internet technology holds the potential to fundamentally change banks and the banking industry. An extreme view speculates that the internet will destroy old models of how bank services are developed and delivered (DeYoung, 2011). The widespread availability of internet banking is expected to affect the mixture of financial services produced by banks, the



manner in which banks produce these services and the resulting financial performances of these banks. Whether or not this extreme view proves correct and whether banks take advantage of this new technology will depend on their assessment of the profitability of such a delivery system for their services. In addition, industry analysis outlining the potential impact of Internet banking on cost savings, revenue growth and risk profile of the banks have also generated considerable interest and speculation about the impact of the Internet on the banking industry (Berger, 2013).

### **Measures of E-Banking and Financial Performance**

E-banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. The following are the indicators of e-banking when used by customers and commercial banks: personal computer (PC) banking, Internet banking, virtual banking, online banking, home banking, remote electronic banking, and phone banking. PC banking and Internet or online banking are the most frequently used designations.

The Basle Committee on Banking Supervision of the Bank of International Settlements (BIS) has recommended using capital adequacy, assets quality, management quality, earnings and liquidity (CAMEL) as criteria for assessment of financial performance (ADB 2012). The sixth component, market risk (S) was added to CAMEL in 1997 (Gilbert, Meyer and Vaughan 2000). CAMELS framework is a common method for evaluating the soundness of financial institutions including commercial banks. This system was developed by regulatory authorities of the U.S banks. The Federal Reserve Bank, the Comptroller of the Currency and the Federal Deposit Insurance Corporation all use this system (McNally 2016). Monetary authorities in most of the countries are using this system to check up the health of an individual financial institution. CAMELS framework system looks at six major aspects of a financial institution: capital adequacy, asset quality, management soundness, earnings, liquidity, and sensitivity to market risk (Hilbers, Krueger and Moretti 2010).

### **Capital Adequacy**

Capital adequacy ultimately determines how well commercial banks shocks to their balance sheets. Thus, it tracks capital adequacy ratios that take into account the most important financial risks, foreign exchange, credit, and interest rate risks by assigning risk weightings to the institution's assets. Leverage ratio can be used to measure the capital adequacy of a bank. This is the ratio of bank's book value of capital to the book value of its assets. The higher ratio shows the higher level of capital adequacy. The leverage ratio stated in the foregoing discussion is simple capital to assets ratio. In other words, assets are not risk adjusted. The 1993 Basel Accord enforced the capital ratio to risk adjusted assets of commercial banks. According to this accord, capital must equal to or exceed 4 percent of the risk weighted assets of the commercial banks.

### **Asset Quality**

Credit risk is one of the factors that affect the health of an individual commercial bank. The credit risk depends on the quality of assets held by an individual commercial bank. The quality of assets held by a commercial bank depends on exposure to specific risks, trends in non-performing loans, and the health and profitability of bank borrowers especially the corporate sector. We can use a number of measures to indicate the quality of assets held by commercial banks. ADB suggests these measures—loan concentration by industry, region, borrower and portfolio quality; related party policies and exposure on outstanding loan, approval process of loan, check and balance of loans; loan loss provision ratio; portfolio in

arrears; loan loss ratio; and reserve ratio-of checking the quality of assets of a commercial bank (ADB 2012).

### **Management Quality**

Sound management is key to bank performance but is difficult to measure. It is primarily a qualitative factor applicable to individual institutions. Several indicators, however, can jointly serve as an indicator of management soundness. Expenses ratio, earning per employee, cost per loan, average loan size and cost per unit of money lent can be used as a proxy of the management quality. ADB recommends cost per unit of money lent as a proxy of management quality. But this cannot be used as an indicator of management quality. Since the data on amount of the total loan mobilized during a particular financial year is not available in published financial statements and annual reports.

### **Earning Performance**

Earning capacity or profitability keeps up the sound health of a commercial bank. Chronically unprofitable commercial bank risks insolvency on one hand and on the others, unusually high profitability can reflect excessive risk taking of a commercial bank. There are different indicators of profitability. Return on assets, return on equity, interest-spread ratio, earning-spread ratio, gross margin. Commercial Banks operating profit margin and net profit margin are commonly used profitability indicators.

### **Liquidity**

Liquidity risk threatens the solvency of financial institutions. In the case of commercial banks, first type of liquidity risk arises when depositors of commercial banks seek to withdraw their money and the second type does when commitment holders want to exercise the commitments recorded off the balance sheet. Commercial banks have to borrow the additional funds or sell the assets at fire sale price to pay off the deposit liabilities. They become insolvent if sale price of the assets are not enough to meet the liability withdrawals. The second type of liquidity risk arises when demand for unexpected loans cannot be met due to the lack of the funds. Commercial banks can raise the funds by running down their cash assets, borrowing additional funds in the money markets and selling off other assets at distressed price. Both liability side liquidity risk (first type risk) and asset side liquidity risk (second type risk) affect the financial performance of commercial banks adversely. But maintaining the high liquidity position to minimize such risks also adversely affects the profitability of FIs. Return on highly liquid assets is almost zero. Therefore, financial institutions should strike the trade-off between liquidity position and profitability so that they could maintain their health sound. Commercial bank's liquidity exposure can be measured by analyzing the sources and uses of liquidity. In this approach, total net liquidity is worked out by deducting the total of uses of liquidity from the total of sources of liquidity. In addition, different liquidity exposure ratios such as borrowed funds to total assets, core deposit to total assets, loans to deposits, and commitments to lend to total assets are used to measure the liquidity position of a commercial bank (Saunders and Cornett 2014).

### **Sensitivity to Market Risk**

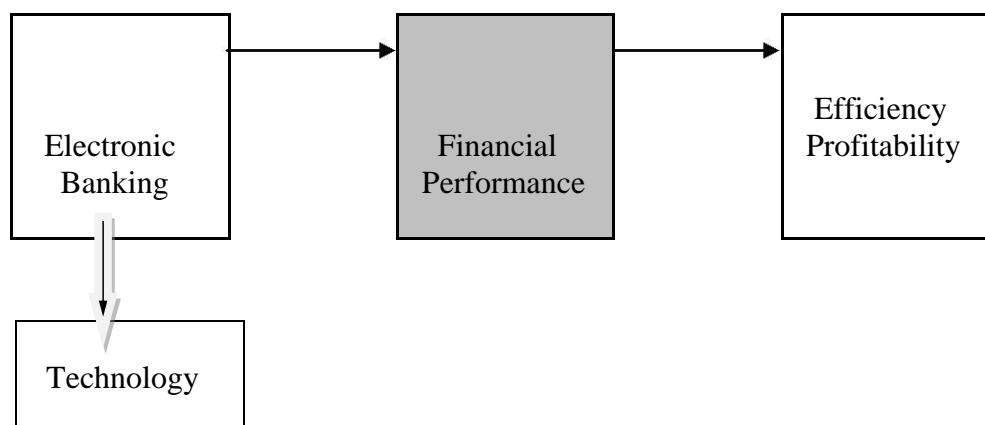
Commercial banks are increasingly involved in diversified operations such as lending and borrowing, transaction in foreign exchange and selling off assets pledged for securities. All these are subject to market risk like interest rate risk, foreign exchange rate risk, and financial asset and commodity price risk. The health of a commercial bank is more sensitive to market

risk is more hazardous than that of less sensitive. Foreign exchange risk, interest rate risk, equity price risk, and commodity price risk are the indicators of sensitivity to market risk.

The study adopted technology acceptance theory propounded by Davis, Bagozzi, and Warshaw (1989). The trio explained the conceptual model that users' intention or acceptance degree towards information system or new technology. TAT is constructed on the foundations of perceived usefulness and perceived ease of use. Perceived usefulness refers to individual belief to improve the degree of job performance through using particular new technology and information system. Perceived ease of use indicates how easy an individual learns how to operate or use new technology or information system (Davis et al., 1989; Gefen et al., 2003). The model places more emphasis on how perceived ease of use would positively affect perceived usefulness. Exogenous variables such as environment are also the antecedent that induces perceived usefulness and perceived ease of use. Thus, TAT is based on both important perceptive factors as perceived usefulness and perceived ease of use. TAT is widely applied on the research of information technology. Liu and Arnett (2000) examined the significant variables to build a successful website based on TAT theory. Gefen et al. (2003) combined TAT and rust to propose an integrated model for explaining online consumer behavior. Pavlou (2003) proposes e-commerce acceptance model of online consumers by separating and applying experiment designs and survey.

Follow-up studies such as Horst, Kuttschreuter and Guttering (2007) discusses whether or not the government of Netherlands should serve the public with electronic government like other countries do. The study integrates TAT factors, the experiences of the public, perceived risk and faith. The empirical results show that the principle of e-government is that people fully trust the governmental organization and that they highly identify with information technology. As a result of the empirical study, scholars find that TAT does not only apply to examine new information technology accept intention or behavior, but also ensures that TAT is suitable for the explanation of online user behavior issues (Liu & Arnett, 2000).

### Conceptual Model



**Fig 1: Conceptual Model of the Study**

**Source:** Njuguna & Wanderi (2012)

The above model is evident to the contributory role of electronic banking as a major driving force for deepening financial performance anchored upon efficiency and profitability. Banks cannot attain their financial performance target in this modern day business world if utmost priority is not given to electronic banking with the intent to encourage both efficiency and

profitability. Fundamentally, wide presence of technology adoption of most banks will accelerate the potency of electronic banking to encourage efficiency and profitability during service delivery which will gravitate towards establishing financial performance.

### Conclusion

The study was able to achieve the set objectives which sought to examine the effect of e-banking system on the performance of commercial banks. The study found that commercial banks have highly implemented e-banking. Though, it was stressed in the literature that the adoption of electronic banking has been slow due to impaired unavailability of infrastructure and lack of supportive legislation for internet banking in Nigeria (Nyangosi et al 2009). However the adoption of e-banking has enhanced performance of the banking industry due to increased efficiency, effectiveness and productivity. The study found that electronic banking has been adopted at a faster rate due to its convenience, accessibility and flexibility

### Recommendations

The study reveals that e-banking increases the bank performance. In order to give the growing trends of information and communication technology (ICT) which involves e-banking and e-commerce in banks a vision in the right directions, the following strategies are recommended for further follow up and implementation;

- i. The banks must be focused in terms of their needs and using the right technology to attain profitability, rather, than acquiring technology of internet banking because other banks have it.
- ii. The adoption of electronic banking must be geared towards enabling efficiency in service delivery. This will tend to be a cost justification for its usage and a tool for enhancing profitability.
- iii. In other to make banking practices in Nigeria match global standards, regulatory authorities like Central Bank of Nigeria must stipulate minimum standards for the banks to follow to avert outdated technological infrastructures.
- iv. Training and manpower development is another major problem limiting growth of e-commerce in the country. Government must make right IT policy by ensuring that computer, communication equipment are locally manufactured to encourage consumer confidence in locally manufactured products.
- v. Government Policy that will guide against money laundering, fraud and security risks posed by e-banking must be consistent.
- vi. To counter the legal threat and security posed to net banking and e-commerce, the necessary legal codes backing the industry must be established by the regulatory body as well.
- vii. This study also recommends that commercial banks should expand their electronic services in a planned and well-articulated strategy for the long run, in order to have customer satisfaction and increase in banks profitability.

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