

Electronic Banking and Accessibility of Financial Services in Commercial Banks: Theoretical and Empirical Literature Review

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Abstract: The Kenya 2030 vision for financial services aims at creating a vibrant and globally competitive financial sector that will create jobs and promote high levels of savings to finance the country's overall investment needs. Electronic banking has influenced the provision of financial services in the world. It has enabled faster and efficient provision of financial services. Even though it has many advantages, electronic banking has its share of challenges such as security of accounts, access to the internet, technological failure, financial and technological literacy and regulatory challenges. This paper presents the background knowledge about electronic banking and accessibility of financial services by commercial banks. It then discusses the problem statement which includes the challenges faced by commercial banks in provision of financial services using electronic banking in Kenya. The paper progresses to review the theoretical and empirical literature in support of the title. It concludes by presenting findings of a benchmark case study done in Ghana on the effects of electronic banking on financial services and similar studies which are related to this study under findings and conclusion. Subsequently the paper provides insight for further research to be carried out under this area through providing a platform to research under conclusion and recommendations.

Keywords: Electronic Banking, Financial Services, Commercial Banks and Technology.

1. INTRODUCTION

The Kenya 2030 vision for financial services aims at creating a financial sector that is vibrant and globally competitive and that will create jobs and promote high levels of savings that will finance the country's overall investment requirements [35]. Advancement in technology has played a big role in achieving this vision and according to Asare and Sakoe [12], it has influenced delivery of financial services across the World. The banking sector in Kenya, which consisted of the Central Bank and 43 banking institutions as at 31st December 2016 [18] has also played an instrumental role in achieving the vision. Access to financial services is a crucial enabler of economic and social development [69] and financial accessibility in Kenya has continued to improve and now stands at 75.3% according to Financial Access Household Survey [22]. This improvement is attributed to utilization of electronic banking in provision of financial services [12].

Electronic banking is the use of electronic and telecommunication networks to deliver a wide range of financial services to banking customers [67]. According to Brown and Molla [16], electronic banking is an electronic connection between the bank and customers to prepare, manage and control financial transactions. It includes use of automated teller machines, internet banking, mobile banking, telephone banking, online transfer of funds and agency banking in provision of financial services to customers in commercial banks [12]. There are many benefits which are reaped by banks, customers and bank regulators from the use of electronic banking [61], [52]. One of the benefits to the customers is that they are able to carry out many financial transactions such as checking their account balances, paying bills, applying for loans and trading in securities without visiting the bank branch [11].

A financial service is the process of acquiring a financial asset which involves carrying out the transaction required to obtain the financial asset [13]. The financial sector covers many different types of transactions in such areas as real estate, consumer finance, banking and insurance [13]. It also covers a broad spectrum of investment funding, including securities [13]. Financial services offered by banks include: opening and maintaining current and savings accounts for individuals and businesses; taking deposits from customers with accounts in the bank; cashing cheques; extending loans to individuals and businesses; issuing debit cards, cash point cards and credit cards; offering financial advisory services; effecting money transactions such as wire transfers and bankers drafts and selling travellers cheques [29].

According to the North America Consumer Digital Banking Survey [4], digital banking in North America is not an all-or-nothing proposition. The survey [4] established that online banking remains the dominant channel, but consumers are not abandoning the branch. It further established that to get the value they want, consumers do not always choose the same channel but make banking channel choices based on their specific needs at the time [4]. Bialas, Beaudoin and Coradini [15] stated that with the evolution of online and mobile banking services in the United States of America (U.S.A.), the branch-on-every-corner model has evolved. Bialas et al. [15] further stated that it is no longer about which brand has the most locations but about how effectively the bank is delivering services to its customers and their need for remote, anytime, anywhere access for their transactions.

Asare and Sakoe [12] stated that in Ghana, electronic banking has enabled many products and services to be offered to customers and hence the customers do not have to travel to the branch to access the banking services. Asare and Sakoe [12] further stated that banks have invested heavily in information technology infrastructure and are hence able to offer a wide range of products and services including automated teller machines, internet banking and mobile banking. Kehinde, Anyikwa, and Oladimeji [41] stated that in Nigeria, the banking system has over the years operated on the manual system. Kehinde et al. [41] further stated that electronic banking in Nigeria began in the late 1980s and today, with the improved telecommunication system, the electronic banking system has come of age compared to other nations of the world.

Gardachew [32] stated that the banking industry in Ethiopia is underdeveloped and therefore there is need to modernize the banking system by employing state of the art technology that is being used elsewhere in the world. In Uganda, the use of technology has led to improvement in access to non-bank formal financial services although this segment is dominated by mobile money transfer services [28]. According to the Bank Supervision Annual Report [18], [19], Kenyan banks have embraced the use of information and communication technology in the provision of banking services. The advancement in technology has played an important role in improving service delivery standards in the banking industry [18].

Electronic banking has revolutionized the way banks provide financial services to their customers [68]. This though has not been without challenges which have brought inconveniences in accessibility of banking services due to inconsistencies caused by electronic banking [14]. Some of the challenges are accessibility to the internet, security issues and high levels of technological and financial illiteracy [12]. Other challenges are increased cases of information communication technology (ICT) related frauds especially from computer, mobile and internet banking [18].

2. STATEMENT OF THE PROBLEM

According to Bank Supervision Annual Report [21], accessibility of financial services has been an issue for a long time in Kenya. The first Financial Access Survey was carried out in 2006 after the financial sector stakeholders unanimously agreed that there was a constraint in access to financial services [18]. The financial stakeholders also noted that there was no reliable data or clear quantitative measure of the extent of access to financial services or the extent of the challenges of access to financial services in Kenya [18]. It was thus agreed that to address these issues, there was need to get reliable data on these critical areas. Hence the carrying out of the first Financial Access Survey in 2006.

According to Asare and Sakoe [12], electronic banking involves provision of financial services through internet banking, mobile banking, agency banking and automatic teller machines. Asare and Sakoe [12] further state that electronic banking has empowered banking customers by improving accessibility of financial services. Customers now can transact and access banking services without visiting their bank branches and at their own convenience which has led to dwindling of long queues previously observed in banks in Ghana [12]. Accessibility to financial services has also improved through the years in Kenya as observed in the Bank Supervision Annual Report [21] and Financial Access Household Survey [22]. According to the two reports, the percentage accessibility of banking services in Kenya stood at 26.7% in 2006, 40.5% in 2009, 66.9% in 2013 and 75.3% in 2016.

According to Asare and Sakoe [12] and Bank Supervision Annual Report [21], delivery of banking services has been made increasingly faster to cover a wide range of customers at many different locations in Ghana and Kenya respectively. According to the Bank Supervision Annual Report [21], and contrary to many findings by researchers, electronic banking has not been very successful in replacing the old methods of provision of banking services. This is evidenced by the Financial Access Household Survey [22] findings which stated that the most frequently used channels to access bank services in Kenya are: bank branch 41%; automated teller machines 38%; bank agent 14%; mobile banking 7% and internet banking 0.3%. It hence shows that 79% of the customers are still frequenting the bank branch and using automated teller machines to access financial services [22].

A lot of research has been done on electronic banking and performance of commercial banks and has generally established that electronic banking has affected positively the performance of commercial banks [12], [53], [38], [37], [1], [49], [30], [9] and [6]. Based on the Financial Access Household Survey [22], more research needs to be done since banking customers mostly use automated teller machines and the bank branch and rarely use the other channels. Although the performance of commercial banks and accessibility of financial services has improved over the years [20], the question is whether this improvement has been brought about by electronic banking or other factors.

Electronic banking has been facing a lot of challenges such as security of accounts, inconveniences due to technological failure, financial and technology literacy, internet access, additional cost to customers and regulatory challenges [12]. These challenges have affected utilization of electronic banking by customers in the banks to access financial services. This also raises the need for establishing whether with these challenges, electronic banking has improved accessibility of financial services in commercial banks.

3. THEORETICAL LITERATURE

A theory is a reasoned statement or group of statements which are supported by evidence meant to explain phenomena [42]. There are many theories that support utilization of electronic banking by commercial banks in their endeavour to reduce costs of providing financial services and to improve accessibility of the services by customers. This paper reviews nine of these theories which are: Bank-Led Theory; Non-Bank-Led Theory; Bank-Focused Theory; Financial Intermediation Theory; Technology Acceptance Theory; Task-Technology-Fit theory; Theory of Reasoned Action; Innovation Diffusion Theory and Agency Theory.

3.1. Bank-Led Theory:

In the bank-led theory, a financial institution delivers financial services through a retail agent [45]. Retail agents interact with customers and perform functions just as a branch-based teller [56]. Bank-led model offers a distinct alternative to conventional branch-based banking since the customer conducts financial transactions using the retail agents instead of the bank branches [45]. This model promises the potential to substantially increase the financial services outreach by using different delivery channels which may be significantly cheaper than the bank based channels [29].

3.2 Non-Bank-Led Theory:

In this theory, according to Lyman, Ivatury and Staschen [45], customers neither deal with a bank, nor maintain a bank account. They deal with a non-bank firm which can be a mobile network operator, a prepaid card issuer or a retail agent [45]. Lyman et al. [45] further stated that customers exchange their cash for electronic money stored in a virtual electronic money account on the non-bank's server, which is not linked to a bank account in the individual's name. According to Kapoor [40], this model is riskier as the regulatory environment in which these non-banks operate might not give much importance to issues related to customer identification. Further, Kapoor [40] stated that the non-banks are not much regulated in areas of transparent documentation and record keeping which is a prerequisite for a safe financial system.

3.3 Bank-Focused Theory:

This theory is based on the use of non-traditional low-cost delivery channels by a traditional bank to provide banking services to its existing customers [29], [40]. According to Kapoor [40], examples range from use of automatic teller machines (ATMs), internet banking or mobile phone banking. Although the bank-focused model offers advantages such as more control and branding visibility to the financial institutions concerned, it is not without its challenges [40]. The customer's primary concerns are the quality of experience, security of identity and transactions, reliability and accessibility of service and extent of personalization allowed. Banks address these issues by providing a branchless banking service with an easy to use interface [40].

3.4 Financial Intermediation Theory:

According to Greenbaum and Thakor [36], the intermediation theory builds on the notion that intermediaries serve to reduce transaction costs and informational asymmetries. The theory is based on the theory of informational asymmetry and the agency theory and its goal is to explain why financial intermediaries exist [36]. The theory of financial intermediation is built on the economics of imperfect information that began to emerge during the 1970s with the seminal contributions of [8], [66], [59]. As pointed out by Scholtens and Wensveenn [60], the existence of financial intermediaries as indicated by the intermediation theory is explained by the existence of high cost of transaction, lack of complete information in useful time and the method of regulation. Financial intermediaries exist because they can reduce information and transaction costs that arise from an information asymmetry between borrowers and lenders [24], [36].

3.5 Task-Technology-fit theory:

According this theory, the success of an information system is measured by comparing the fit between task and technology and hence success is related to individual performance [34]. The theory suggests that a better fit between technology functionalities, task requirements, and individual abilities will lead to better performance [63]. The theory maintains that a relation between business tasks and information technology is crucial in explaining and predicting the success of information systems [34], [70]. The information system can only have a positive impact on individual performance when the technology is utilized, and there is a good fit with the tasks that the technology supports [34]. Goodhue and Thompson [34] further argue that task-technology-fit determines the performance of using information technology, and that users can reliably evaluate the task-technology-fit.

3.6 Technology Acceptance Model:

It was originally proposed by Fred Davis in 1986. It has helped in explaining and predicting user behavior of information technology [44]. According to Ajzen and Fishbein [7], it is considered an influential extension of theory of reasoned action. It explains why a user accepts or rejects information technology by adapting theory of reasoned action [25], [26]. Technology Acceptance Model provides a basis with which one traces how external variables influence belief, attitude, and intention to use [25]. According to Technology Acceptance Model, one's actual use of a technology system is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system [27]. The model emphasizes the positive impact of perceived simplicity of use on the impression of the system's usefulness [33].

3.7 Theory of Reasoned Action:

It was formulated by Fishbein Ajzen. It is a widely studied model which is concerned with the determinants of consciously intended behaviours [7], [31]. According to the theory of reasoned action, a person's performance of a specified behaviour is determined by his or her behaviour intention to perform the behaviour and the behaviour intention is jointly determined by the person's attitude and subject norm concerning the behaviour in question [26]. According to Ajzen and Fishbein [7], behavioural intentions are a function of significant beliefs and facts about the possibility of carrying out a specific behaviour which leads to a particular result. Behaviour beyond the acceptance of technology has been explained using theory of reasoned action by employing four ideas which are: intention to use; actual use; subjective norms and behavioural attitudes [7].

3.8 Innovation Diffusion Theory:

Innovation Diffusion Theory (IDT) was formulated by Everett M. Rogers in 1962. It explains and describes the mechanism of utilization and success of new inventions [23]. According to Mahajan and Peterson [46], an innovation is any idea, object or practice that is perceived to be new while diffusion of innovation is the process through which the innovation is communicated using various channels over a period of time. Sevcik [62] stated that not every innovation is utilized even if it is good and added that sometimes it may take a long time for an innovation to be utilized. Rogers [58] identified five attributes that affect the rate of utilization which include relative advantage, compatibility, complexity, triability and observability.

3.9 Agency Theory:

This theory was first proposed by Stephen Ross and Barry Mitnick in the 1970s. An agency relationship is one in which one or more persons (the principal) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent [48], [39]. The various forms of agency relationship are

employer (principal) and employee (agent); state (principal) and ambassador (agent); constituents (principal) and elected representative (agent); organization (principal) and lobbyist (agent) and shareholders (principal) and chief executive officer (agent) [50]. Agency in relation to a bank is defined by the Banking Act [43] as an entity contracted by an institution and approved by the Central Bank or sub-contracted by such entity to provide the services of the institution on behalf of the institution, in such manner as may be prescribed by the Central Bank. In May 2010, Central Bank of Kenya introduced the agency banking model that allows third parties to offer specific banking services to the customers on behalf commercial banks [17].

4. EMPIRICAL LITERATURE

Abubakar, Shagari and Olusegun [3], in their study on the relationship between electronic banking and liquidity of banks in Nigeria established that among point of sale, internet banking and mobile banking, point of sale is the most patronized in terms of the value of transactions. In addition, the association between internet banking and liquidity was found to be negatively significant, meaning that an increase in the value of internet banking will result in a decrease in liquidity. The study also discovered that point of sale and mobile banking have no significant relationship with liquidity during the period under review while internet banking has a significant negative relationship with liquidity.

Arisa and Muturi [11], in their study on effect of electronic banking on financial performance of Commercial Banks in Kenya noted that there exists a positive relationship between electronic banking and bank performance though internet banking affects financial performance to a less extent. In their study on electronic banking and bank performance carried out in Nigeria, Oginni, Mohammed, El-maude and Arikpo [53] indicated that electronic banking begins to contribute positively to bank performance after two years of adoption in terms of return on assets (ROA) and net interest margin (NIM) while a negative impact was observed in the first year of adoption.

Malhotra and Singh [47] assessed the impact of internet banking on bank performance and risk in India. The results revealed that there is no significant association between internet banking and profitability on one hand, and on the other hand, there is a significant negative association between internet banking and risk profile of banks in Indian. Eze and Egoro [30], in their study on electronic banking and profitability of Commercial Banks in Nigeria, established a positive relationship between electronic banking and profitability. They further established that it cannot be concluded whether adopting electronic banking is the key factor in improving bank profitability.

Idowu, Alu and Adagunodo [38] carried out a study on the effects of information technology on the growth of banking industry in Nigeria. The result showed that information technology (IT) has contributed immensely to the growth of banking industry in Nigeria. Similarly, Adewale and Afolabi [5] conducted a study on the effects of information and communications technology (ICT) on the growth of Nigerian Banking industry. The result revealed that electronic banking has improved customer satisfaction. Okibo and Wario [54] investigated the effects of electronic banking on the growth of customer base in Kenyan banks. The results revealed that electronic banking has enhanced the growth of customer base for banking institutions in Kenya.

Abubakar [2] studied the effects of electronic banking on growth of deposit money banks in Nigeria. The study revealed that a positive relationship exists between mobile banking and total deposits and also between internet banking and total asset. On the other hand, the study revealed that there is no significant relationship between internet banking and total deposits and also between mobile banking and total asset. Hassan, Maman, and Farouk [37] studied electronic banking products and performance of Nigerian deposit money banks. The study established that the adoption of electronic banking products has strongly and significantly impacted on the performance of Nigerian banks on one hand, while on the other hand, the results showed that electronic direct and short message services (SMS) alert have not significantly impacted on the performance of the banks.

Abaenewe, Ogbulu and Ndugbu [1] investigated electronic banking and bank performance in Nigeria. The results revealed that electronic banking has positively and significantly impacted on the return on equity (ROE) of Nigerian banks, but has not significantly improved the return on assets (ROA). Siam [65] investigated the role of electronic banking services on the profits of Jordanian banks and concluded that the effect of electronic banking services on banks profitability is negative in the short run and positive in the long run. Meihami, Varmaghani and Meihami [49] examined the effect of using electronic banking on profitability of banks. The findings showed that electronic banking has improved the performance of banks measured by bank incomes.

Aduda and Kingoo [6] carried out a study on the relationship between electronic banking and financial performance among commercial banks in Kenya. The results revealed that a positive relationship exists between electronic banking and bank performance. Sumra, S., Manzoor, Sumra, H. and Abbas [68] examined the impact of e-banking on profitability of Pakistani banks. The study showed that electronic banking has increased the profitability of banks and enabled banks to meet their costs and earn profits even in the short span of time. In the study carried out by Akhisar, Tunay K. and Tunay N. [9] on the effects of innovations on bank performance, the findings indicated that almost all the banking services under consideration affect the profitability positively. However, the number of point of sale terminals and the number of customers using internet banking services were found to affect profitability negatively.

Al-Smadi and Al-Wabel [10] carried out a study to examine the impact of electronic banking on Jordanian banks performance for the period 2000-2010. The results showed that electronic banking has a significant negative impact on the banks performance since banks in Jordan depended on traditional channels to carry out their banking operations and hence the costs associated with its adoption were higher than the incremental revenues. Onay, Ozsoz and Helvacioğlu [55] investigated the impact of internet banking on banks profitability in Turkey. The results of the findings show that internet banking starts contributing to the banks return on equity (ROE) with a time lag of two years while a negative impact is observed for one and half years of its adoption. In their study on mobile banking and financial performance of Commercial Banks in Kenya, Ritho and Jagongo [57] established that mobile banking has a positive influence on the financial performance of commercial banks.

Shirley and Sushanta [64] studied the impact of information technology on the banking industry and analyzed both theoretically and empirically how information technology related spending can affect bank profits via competition in financial services that are offered by the banks. They established that though information technology (IT) might lead to cost saving, higher information technology (IT) spending can create network effects lowering bank profits. Nader [51] analyzed the profit efficiency of the Saudi Arabian Commercial Banks during the period 1998-2007. The results of the study indicated that availability of phone banking, number of automated teller machines (ATMs) and number of branches has a positive effect on profit efficiency of Saudi banks. On the contrary Nader [51] found that the number of point of sale terminals, availability of personal computer banking and availability of mobile banking did not improve profit efficiency.

In a study carried out by Kehinde, Anyikwa and Oladimeji [41] on the electronic banking system and efficient service delivery in the banking sector in Nigeria, it was revealed that while the electronic banking system is of value and generally will improve the service to customers in the banking industry, there are issues of knowledge and security that cast doubt on the application of electronic banking technology in Nigeria. The continuous existence of crowds in the banking hall despite the electronic banking scheme is due to lack of confidence in the system and due to many issues that the electronic banking system could not resolve. The poor state of technology in use in Nigeria is another mitigating factor since most electronic banking technology in Nigeria is out-model and out-dated when compared with developed countries. This accounts for why the intended cashless society still remains a mirage in most parts of Nigeria.

In the study carried out by Asare and Sakoe [12] on the effects of electronic banking on financial services in Ghana, it was established that electronic banking has affected financial services by empowering banking customers, improving the standard of service delivery and making banking more competitive and complex. It was established that electronic banking has a positive effect on bank productivity, banking transactions, cashier's output, bank patronage, bank services delivery, customers' services and bank services. Electronic banking has affected positively the number of people who have access to financial services in Ghana and has enabled banks to reduce cost and banking services to be delivered faster, efficiently and with less staff. Electronic banking has faced various challenges in Ghana such as security of accounts, access to internet, increased cost to customers, adoption of global technology to local requirements, ability to strengthen public and government support for electronic banking, creation of the necessary information technology infrastructural base to propel electronic banking delivery, high illiteracy rate and the creation of the necessary level of regulatory and institutional framework for electronic banking.

5. FINDINGS AND DISCUSSIONS

5.1 Theoretical Literature:

The main advantage of utilization of electronic banking is reduction of costs of delivery of financial services by the bank and reduction of costs of accessibility of financial services by the customer. Many studies on electronic banking and performance of commercial banks have used various theories to support the studies. Nine of these theories have been

reviewed above which are all related to the study of interest in this review. Bank-led theory, non-bank-led theory and bank-focused theory relate to the aspect of branchless banking. When customers use electronic banking, they can access services from anywhere without visiting the branch hence the relevance of these theories to the study. The theory of financial intermediation is based on cost of transactions and access to information by the customers. The financial institutions help in reducing the cost of transaction and can easily access information on behalf of the customers hence the relevance of this theory to the study.

Task-technology-fit theory looks at how fit a certain technology is to the task in question. The task in this case is accessibility of financial services and the question is whether utilization electronic banking will improve accessibility of the financial services. Technology acceptance theory, theory of reasoned action and innovation diffusion theory are behavioural and concentrate on the reason why a customer will or will not use a certain technology. These theories are therefore relevant to the study since the study is anchored on the use of the technology by the customer although they would be more relevant to a study involving adoption of technology. Agency theory looks at the conflict between the agent and the principal (bank). It is very relevant since electronic banking as stated above is related to branchless banking and conflicts could arise between the agent and the bank.

5.2. Empirical Literature:

Majority of the studies are about the effect of electronic banking on performance of commercial banks. Many of this studies established that there was a positive relationship between electronic banking and performance of banks. A few of those studies established that utilization of electronic banking had a negative effect on performance of commercial banks in the short run and a positive effect on performance in the long run [53], [55]. Several of the studies established that utilization of electronic banking had a negative effect on the performance of commercial banks [47]. Only one study by Asare and Sakoe [12] on the effects of electronic banking on financial services in Ghana was related to accessibility of financial services in commercial banks. This study established that electronic banking has a positive effect on access to financial services in Ghana and enables banks to reduce cost and deliver banking services faster, efficiently and with less staff. In the study by Kehinde, Anyikwa and Oladimeji [41], it was established that the introduction of the electronic banking services will improve provision of financial services but there were issues of knowledge and security that cast doubt on the application of electronic banking. The studies on electronic banking and accessibility of financial services are therefore very few. Most of the studies on electronic banking have concentrated on measuring performance as the dependent variable and neglected the financial services aspect which is important and contributes immensely to the performance of banks. Studies done on electronic banking and performance have varying results hence there is still a dilemma on the relationship between electronic banking and financial performance of commercial banks.

6. CONCLUSION AND RECOMMENDATIONS

Under theoretical literature, many of the theories reviewed can be applied when studying the relationship between electronic banking and accessibility of financial services. More specifically, bank-led theory, non-bank-led theory and bank-focused theory are very relevant to this study. Under empirical literature, it is evident that most of the studies done in Kenya are about electronic banking and financial performance of commercial banks. There is no study about electronic banking and accessibility of banking services in Kenya. Ghana has faced many challenges in provision of financial services by banks and it is important to establish whether Kenya faces the same challenges faced by Ghana. The studies done on electronic banking and financial performance had varied results and therefore this issue has not been finalised. This paper therefore opens a platform for a study to be carried out to fill this gap through studying the relationship between electronic banking and accessibility of financial services in commercial banks. More studies also need to be carried out on the relationship between electronic banking and performance of financial institutions.

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