EFFECT OF FINANCIAL DISTRIBUTION CHANNELS EVOLUTION ON FINANCIAL INCLUSION IN KENYA

Moses Wanami Sindani
Doctor of Philosophy Student, Jomo Kenyatta University of Agriculture and Technology, Kenya

Prof. Willy Muturi
Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

Dr. Patrick Ngumi
Lecturer, Jomo Kenyatta University of Agriculture and Technology, Kenya

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ABSTRACT

The main objective of the study is to determine the effect of financial distribution channels on financial inclusion in Kenya. The study was guided by the following specific objectives; to investigate the effect of internet banking on financial inclusion in Kenya; to determine the effect of ATM banking on financial inclusion in Kenya. The researcher collected specific secondary data for subsequent analysis. The data was collected for the period 2012 to 2017. This study adopted a mixed research design including descriptive and co-relational research design. The population of interest was all the 44 banks in Kenya. The study used secondary data collected using a data collection sheet. In order to conduct analysis, frequency tables, percentages and means was used to present the research findings. Descriptive statistics was used to portray the sets of categories formed from the data. The mean, standard deviation and variance on the dependent and independent constructs was used to show how clustered or dispersed the constructs were. The study found out that R-square (coefficient of determination) was 0.899. The study concludes that internet banking has enhanced the Kenyan banking industry by making it more productive and effective. ATM banking has also a strong positive relationship on the financial inclusion. The study recommends that Policy makers should consider internet banking in formulating strategies because of the technological developments and the expected switch from physical branch networks to technologically supported banking services.

Key Words: *financial distribution channels, financial inclusion, ATM Banking, internet banking*

INTRODUCTION

According to Sarma (2008), financial inclusion refers to the total sum of all financial assets is a broad measure of financial inclusion and it encompasses the per capita growth rate of real money balances (Buckley, Greenacre & Malady, 2015). A wide range of financial assets can be used to assess financial inclusion for instance; liabilities of non-bank financial assets (NB), value of shares (VS), broad money (M2), money market fund (MMF) and treasury bills (TB). The approximate sum of these financial assets can be used as a measure to readily approximate the extent of financial inclusion. Financial inclusion is an important component of economic growth of an economy through its facilitation of goods and services exchange, mobilization and pooling of savings (Caporale, Rault, Sova & Sova, 2009). It enables the acquisition and processing of information about companies and potential investment thesis thereby allocating public savings to the most productive uses (Levine, 2005). It also promotes financial stability to the extent that deep and liquid financial systems with diverse instruments help dampen the impact of shocks.

According to Ondiege (2010), the mobile phone can serve as a virtual bank card where customer and institution information can be securely stored, thereby avoiding the cost of distributing cards to customers. As such a mobile phone could be used to transact and communicate with the appropriate financial institution to solicit transaction authorization. Among other roles, the mobile phone can also be used as an ATM and as an Internet banking terminal all of which can be used to improve the level of financial depth in an economy (Demombynes & Thegeya, 2012). Dittus and Klein (2011) noted that the other innovative ways adopted by different financial institutions include use of internet banking, automatic teller machines (ATMs), and point-of-sale (POS) devices and banking correspondent. Furthermore, Dittus and Klein posit that the barriers to financial inclusion was not only be improved by agency banking but majorly in cost reduction. Other methods noted to improve financial inclusion among the millions of South Africans. The regulations should also help in improving the financial access and inclusion for many people who originally were unbanked.

The Central Bank of Kenya (2010) defines an agent as an entity contracted by an institution and approved by the Central Bank of Kenya (CBK) to provide the services of the institution (a bank) on behalf of the institution. Kenyoru (2013) examined the effects that financial innovation has on financial deepening in Kenya. Traditional retail branches have been radically modernized, ATMs have become increasingly sophisticated and other ICT based methods of distribution like hi-tech telephone and internet portals are increasingly widely used. Multi-channelling is increasingly seen as a means of addressing a range of customer needs and expectations (security, privacy, convenience, accessibility, reliability, speed) enabling a financial services provider to more effectively and efficiently serve a diversity of target markets.

STATEMENT OF THE PROBLEM

Changing customer demographics, competition, and a host of economic factors have forced commercial banks to take a relook at their distribution strategy (Barasa & Mwirigi, 2013). Channel innovation has revolutionized the face of banking around the world forcing banks to adopt a multi-channel banking which allows them to transact seamlessly. In the year 2011, access to financial services continued to be enhanced, spurred by increased innovation in the delivery of financial products and services throughout the country. These developments have been a catalyst to fulfilling the goals of building an all-inclusive and efficient financial system. Kenyan population of banked customers have been on an incerasing trend. The population of banking customrs as evidenced by the number of account deposit holders are; year 2002 there was a total of 1,000,000 deposit account holders, 1,682,916 holders in 2006, 3,329,616 customers in the year 2006, 4,123,432 customers in 2007, 8,481,137 customers in the year 2009, 11,881,114 customers in 2010, 14,250,503 deposit holders in 2011, a total of 15,861,417 customers in 2012, 21,880,556 customers in the year 2013 and 28,43,292 bank deposit customers in the year 2014 (CBK, 2014). These numbers although increased have not matched the numbers on some of the platforms adopted by banks to deepen their reach. For instance, Mobile penetration stands at 80% with 32.8 Million subscribers. It is expected that with interlinking of mobile phones and fionancial services, the level of financial depth would increase. Several studies have been conducted on effect of financial distribution channels. For instance, Knuutila, Puttonen and Smythe (2012) carried out a study on the effect of distribution channels on mutual fund flows. The results indicated that in Finland, five-star Morningstar ratings are not regarded as highly as in the U.S, where good performance attracts significantly higher flows. Kuswantoro, Mohd, Abdul and Ghorbani (2012) conducted a study on the impact of distribution channel innovation on the performance of small and medium enterprises. The findings show that innovation in assortment, information sharing and transportation coordination had positive and significant relationships with firm performance. This study also found that distribution channel effectiveness mediated the relationship between innovation in assortment and transportation coordination and firm performance. From the reviewed studies, it is clearly evident that limited studies have evaluated the effects of all the identified financial distribution channels evolution on financial inclusion in Kenya. This presents a gap in knowledge that this study is intended to bridge the effect of financial distribution channels evolution by commercial banks have on the financial inclusion in Kenya.

OBJECTIVES OF THE STUDY

The main objective of the study is to determine the effect of financial distribution channels evolution on financial inclusion in Kenya.

SPECIFIC OBJECTIVES

1. To investigate the effect of internet banking on financial inclusion in Kenya
2. To find out the effect of ATM banking on financial inclusion in Kenya

RESEARCH HYPOTHESES

H_1: Internet banking has no significant effect on financial inclusion in Kenya.
H_2: ATM banking has no significant effect on financial inclusion in Kenya.

LITERATURE REVIEW

Theoretical Review/Framework

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was introduced by Davis, Bagozzi, and Warshaw (1989). The primary goal of the model is to give a detailed explanation of the various factors that have an effect on the general acceptance of computer applications. Davis suggested that the usage of computer information system is attributable to the behaviors of the persons who are intended to use the system (Chooprayoon et al., 2007). This is due to the fact that these behaviors influence the attitudes that system users have towards using the system. The perceived usefulness and attitude by the intended users are also affected by how they perceive the new technology in terms of ease use. Technology acceptance model is used to explain how banks adopt electronic banking.

According to Davis et al. (1989), two factors specifically perceived ease and usefulness are relevant to determine computer use behaviors by intended users. The theorists further defined perceived usefulness to be the probability that the usage of specific computer application systems will consequently enhance job performance. Perceived ease of use on the other hand is the degree with the target application systems can be operated free of effort (Chooprayoon et al., 2007). According to the theory, perceived usefulness and ease of use are the most critical determinants that determine the success of actual system use. Important to note is that these two factors are subjected to certain effects due to the influence of external variables. Various examples of these external factors are; cultural, social and political factors. Social factors include; skills and language. Political factors basically entail the usage of technology in politics.

The model explains how various determining factors are imperative with regards to user's decisions to adopt technological solutions. These decisions in turn lead to actual usage behavior that is acceptance or rejection. The purpose of the model is to explain what causes people to reject or accept information technology. Chooprayoon et al. (2007) defines that the main purpose of TAM is to present an approach to study the effects of external variables towards people's internal beliefs, attitudes and intentions. Venkatesh et al. (2003) explain that TAM was designed to predict information technology acceptance and usage on the job. In the Technology Acceptance Model, the fundamental factors that influence ICT officers' attitudes towards using cloud computing and intended use are perceived usefulness and perceived ease of use.

Perceived usefulness is how a user feels that the innovation contributes to make the work more effective and improves the results. Perceived Ease of Use measures the effort the user has to exert to use the system. They are both influenced by external variables. Venkatesh and Davis (2000) extended 18 the model with explanations on what contributes to Perceived Usefulness and Perceived Ease of Use. The factors that influence the perceived usefulness are Result Demonstrability, Output quality, Job relevance, Image and Subjective Norm. Subjective Norm is moderated by two factors namely Experience and voluntariness. Subjective Norm is defined as a person's perception that most people who are important to him think he should or should not perform the behavior in question (Venkatesh & Davis, 2007). This theory supports technology-based variables including internet banking. The study will therefore seek to determine how acceptance of internet banking platforms affects inclusion of financial services in Kenya.

Diffusion of Innovation Theory

This theory was developed by Rogers (1971). The theory basically explains how new ideas and products gain momentum of acceptance over time hence consequently diffusing in the intended specific population (December, 1996). Diffusion basically encompasses a communication channel that is involved with the spreading of new information due to new ideas (Rogers, 1971). The end result is that people in the specific social system will consequently embrace the newly brought ideas and products without necessarily exhibiting resistance to the new changes. The theory argues that after innovations are introduced into a firm, the target persons do not readily adopt the innovations in equal proportion at that time (December, 1996). The new adoption of changes has the effect that individuals will experience changes in the way they conduct tasks in comparison to the manner in which they did previously. The major driving force behind the adoption of new ideas and products are the perceived notions towards innovation acceptance by target persons, it is then from these notions that technology diffusion is indeed possible (Rogers, 1971). Rogers (1971) poised that there are several factors that have an effect on the diffusion of innovations.

According to Rogers (2003), relative advantage can be viewed as the extent to which innovation is perceived to be superior to the preceding ideas. If implemented innovations can be perceived as relatively advantageous compared to the processes they replace, then they will be willingly adopted into the relevant environment. On the other hand an innovation will be termed as compatible, if it is consistent with the current needs and existing values of the intended adopters. Additionally, innovations which are not perceived as complex stands to be are readily apprehended by intended target members in the firm. In essence, individuals adopt the new improvements after they have observed the potential benefits of the incoming innovation. ATM`s provide a variety of services to customers at the snap of a finger that would normally require one to que for long duration of time sin banks banking hall. This form of innovation has therefore provided more access to critical financial services through the elimination of complex processes. The offered benefits have led to more countywide acceptance thus increasing on the number of people with ready access to financial services. This study therefore sought to establish how the adoption of ATM`s had enhanced financial inclusion in the country over the years.

EMPIRICAL REVIEW

The effect of Internet Banking on Financial Inclusion

Kariuki (2014) explored the factors that influences internet banking adoption in Kenya. The research thesis sought to improve the existing empirical knowledge with regards to internet banking adoption in Kenya. In the study, 100 respondents were targeted and consequently issued with questionnaires. Complete responses from 81 respondents were recovered. Random sampling technique was used to select these study participants. After data collection, descriptive statistics and content analysis were used to analyze the research data. The research findings pointed out that incurred costs by the customer, security of personal and confidential information saved on the internet as well as government regulations concerning internet banking all have an effect on internet banking adoption across diverse banking customers.

Muraguri (2013) assessed the viability of internet banking as an operations strategy in Kenyan commercial banks. The study sought to evaluate the adoption and viability of internet banking as an operations strategy by Kenyan commercial banks. In essence, the researcher had sought to establish the level and availability of usage of internet banking services including other substitute banking channels in use across the various commercial banks. A cross-sectional survey was conducted whereby questionnaires were designed and administered to target bank personnel. Study findings showed that internet banking was becoming increasingly available to customers though with changeable functionality levels and even corresponding usage in terms of offered services.

Internet banking has improved banking efficiency in rendering services to customers. Financial institutions in Kenya cannot ignore information systems since they play an important role in their operations because customers are conscious of technological advancements and demand higher quality services. Internet banking refers to a bank making its services available to clients using the internet as its delivery channel. Using internet banking, registered users are able to log on to the bank's website and carry out banking transactions or inquiries on their accounts (Demombynes & Thegeya 2012).

Internet banking is also commonly referred to as online banking or electronic banking (e-banking). Internet banking services are normally free (or at a nominal charge) to use and enable customers to do their banking at a time that is convenient to them. It relieves the load on the bank's call centres and the branch network. Some internet banks do not have any 'real' branches at all but exist purely as internet accessed banks. Depending on the bank, services available to internet users include transfer of funds between accounts, payment of bills, request for statements or viewing statements on-line, view their investment portfolios and even buy/sell securities (Karjaluoto, 2002).

Omar et al. (2011) sought to determine the various customer perceptions towards online banking services with empirical evidence from Pakistan. The study sought to examine the various customer perceptions, problems, preferences and suggestions concerning online banking in Pakistan. The study findings revealed that most of bank customers preferred internet banking services to branch banking. This preference was due to reliability, security, user-friendly, speed, convenience, safety and cost effectiveness. In contrast however, lack of trust, security problems, ATM related problems affected customers decisions to adopt internet banking services. The identified factors that hinder adoption of internet banking could be used to improve the provision of online banking services so as to reach a greater proportion of the population.

The provision of internet banking services is done either by the bank's core banking system or, more usually, through specialist application packages that control all of the bank's 'multi-channel delivery' (e.g. telephone banking, call-centre banking, internet banking, mobile telephone banking, etc.) which in turn connect to the relevant core banking system depending on the specific service the customer wishes to use. A bank's information security department may prefer that the bank uses a separate application to act as an interface between its internal systems and the internet. This will provide an element of separation between external and internal systems and restrict internet users to the internet interface layer only and not allow direct entry into the bank's internal processing systems (Demombynes & Thegeya, 2012).

Karungu (2014) sought to establish the factors that hinder consumer adoption of internet banking in Kenyan commercial banks. The study target population was the 44 commercial banks that currently operating in Kenya. A census survey was conducted implying that data was collected for all listed banks. The researcher sampled one senior person from each bank in the operation department thus leading to 44 respondents being the sample size. The collected quantitative data was analyzed through the usage of descriptive statistics. Content analysis was further used to analyze collected qualitative data. From the research findings, it was established that the presence of trust in physical banks could imply that the consumers will have consequent trust towards adoption of internet banking. The study recommended that banks need to identify and manage the various identified factors that have an effect on consumers intention to adopt and use internet banking. Banks ought to supply products that are of value to their customers, and ensure that internet banking platforms are safe and secure to use by customers. The addition of these features alongside the adopted internet banking services will serve to increase the up-take by customers since they will feel more secure hence embrace internet banking wholly (Karungu, 2014).

Karungu (2014) further adds that this will in turn lead to widespread provision and accessibility of financial services especially among the youth who form the majority in terms of internet users. Ritho Olweny and Wanderi (2012) explored the adoption of internet banking with a case of Nairobi County, Kenya. The objective of the study was to basically identify the various factors that have an influence on the adoption of internet banking among bank customers who already possess bank accounts with respective banks in Nairobi County. The study concluded that the adoption and use of internet banking in Kenya was very low even though levels of internet access are high. The younger populations were at the forefront in adapting and using internet banking compared to the older generation. This finding was attributed to the fact that the younger generation was relatively more exposed to internet use. The study established that perceived usefulness, relative advantage, self-efficacy, ease of use, compatibility, and perceived results demonstrability were the major factors that had an influence on the adoption and usage of internet banking in Kenya.

Masila (2013) conducted an investigation on the impact of internet banking on financial performance of commercial banks in Kenya. The study acknowledged that internet has become the world's public communication system that rivals the global telephone system in reach and range. Descriptive research design was adopted and descriptive research design used for analysis. The study revealed that an increase in internet as an additional channel of marketing banking services has led to improvement in the financial performance of commercial banks in Kenya. Internet banking also improved banking efficiency in rendering services to customers. The study recommended that banks that have not adopted internet banking should adopt it in order to leverage on the benefits that come with it.

Wanja (2014) conducted a study the effect of internet and mobile Banking On Financial Performance of Commercial Banks in Kenya. The study acknowledged that commercial banks have introduced lots of friendlier customer services such as internet banking in order to gain and improve on competitive advantage over other banks. The study adopted a case study research design and descriptive statistics for analysis. The findings revealed that internet banking increased the performance of commercial banks due to increase in internet transactions as a result as a result of the large number of people using it. The study recommended that banks should invest heavily in technological innovations that would enhance their customers continuously use internet banking and that policy makers should observe and control developments of internet banking to ensure that policy makers do not lose their important and significant regulatory role in their development.

Mulwa (2017) conducted an investigation on the effect of internet banking on financial performance of commercial banks in Kenya. The study acknowledged that internet banking has the potential to profoundly transform financial services and banking industry. The study adopted a descriptive research design and descriptive statistics for analysis. The findings revealed that ROA in commercial banks in Kenya was on an upward trajectory due to increase in online customer deposits through internet banking. In addition, internet expenses fees and commissions increased to total asset ratio increased. The study recommended that the management of the bank should enhance internet banking in order to improve on financial performance in commercial banks.

Stoica, Mehdian and Sargu (2015) assessed on the impact of internet banking on the performance of Romanian banks. The study recognized that over the last decade there has been a new trend in the banking sector of financial innovations such as internet banking to provide them with competitive advantages. The study adopted a case study research design and descriptive statistics for analysis. The study found that very few banks in the sample design of the study had utilized internet banking services in their processes. The study recommended for adoption of internet banking by Romanian banks in order to increase their level of efficiency

The effect of ATM Banking on Financial Inclusion

Ogbeide and Akinmayowa (2014) sought to examine the influence of automated teller machine service quality and customer satisfaction in the Nigerian banking sector. The researchers investigated the various dimensions of automated teller machine service qualities and the effects they have on customer satisfaction. Questionnaires were developed and subsequently used to collect study information from the selected sample of 350 respondents. In addition, regression analysis was carried out. Results from the regression analysis indicated that efficiency in terms of operations; reliability, security, convenience and offered privacy were significant properties of ATMs that led to positive effects on customer satisfaction. Banks ought to differentiate and up-date the various dimensions of their ATM service quality so as to ensure the continuous retention and satisfaction of customers. This will consequently ensure that these machines meet the needs of the customers. Those willing to adopt these machines will be motivated to use them since they will be aware of their benefits of usage and accessibility from those already using them. This up-take will therefore increase financial services access that ensures that vital financial services are provided to the citizenry (Akinmayowa & Ogbeide, 2014).

Lengewa (2014) examined the strategic responses adopted by Kenyan commercial banks to surpass competition in the provision of retail banking services. A descriptive cross-sectional research design was used in addition to the collection of primary data. The study also used an interview guide that specifically targeted senior managers. Collected qualitative data were analyzed through the technique of conceptual content analysis. From the results of analysis, it was established that the major competitive edge as possessed by the various banks has been the target on the huge un-bankable rural poor. It was further revealed that the banking competitive surroundings have been entirely based on; customer-oriented products and services for instance; 24-hour ATM networks, transactional and savings accounts, personal loans, mortgages, debit and credit cards superannuation, SMS banking, evening banking, internet banking and e-statements. These findings can be used to explain the various notions as exhibited by the customers with regards to uptake of ATM services that serve to offer better and convenient financial services.

In addition to possible over-penetration of ATMs in the market, consumers are more frequently turning to debit and credit cards rather than cash to pay for purchases, resulting in fewer trips to the ATM (Akingunola & Okezie, 2011). At the same time, the cost of regulatory compliance, security, cash replenishment and back office operations continues to increase. Consumers continue to view ATMs as an essential banking channel, and for many consumers the ATM has replaced the in-bank experience. As a result, financial institutions continue to deploy new ATMs, even as overall the total number of ATMs declines (due to machine attrition). The number of ATM locations offered by a financial institution can represent a significant competitive asset, regardless of declining overall use. As surcharge rates for non-bank customers continues to rise, the value customers place on convenient, free access to ATMs becomes an important tool for financial institutions in attracting and retaining customers (Akinmayowa & Ogbeide, 2014).

George (2012) looked at factors determining financial inclusion: the case of mobile money transfer services in Nairobi. The main objective of this paper was to examine the factors determining the use of mobile financial services in Kenya. The study used a sample drawn from the Nairobi central business District. A multinomial logit model was used to model the use of three types of financial services namely mobile money transfers, mobile payments and mobile banking against various explanatory factors such as age, gender, and education level, tariff of service and volume of transactions. The study found that the use of more sophisticated financial services - mobile payments and mobile banking - depends on the gender, education and wealth of individuals as well as the tariffs of service and volume of transactions. The study recommended the development of financial products and services which are gender-sensitive and sensitive to low-income earners, as well as creation of awareness on financial services both in urban and rural areas.

Mulwa (2012) reviewed the role of wireless communication in financial inclusion with a case study of selected mobile banking products in Makueni County. Conclusions included that translation needed to recognize that products were context specific; the stability of mobile banking products was dependent on the interplay of all the actors (human and non-human) and what emerges from this interplay. Successful translations depend on how faithful key actors are towards their alliances. Significantly the study established three key theoretical implications in mobile banking if the implementation process has to result to stabilization: No single actor has the ability to set the networks course or impose its own culture and personal goals upon the other nodes sharing the network because the logic of the network sets the rules for participation in the network, a certain size of access points and users was necessary if mobile banking was to sustain itself and translation required that all means be used to ensure that the most successful model of mobile banking is put in place before roll out. The recommendations of the study included that regulators needed to revise regulations to promote market development, the focal actors to step up awareness campaigns and literacy seminars for rural populations, support agents financially and also train of assistants (Mulwa, 2012). The proliferation of ATMs accelerated when financial institutions realized that in addition to providing a cheaper and more convenient way to service customers, the surcharges associated with the ATM had the potential to add up to a significant amount of revenue (Mago & Chitokwindo, 2014).

Since ATM surcharges were introduced in April 1996, the number of ATMs in the United States has nearly tripled, with much of the growth fuelled by independent operators entering the market. By 2007, independently operated ATMs accounted for nearly half of all machines. The traditional metrics used for gauging ATM performance—transactions, revenue and profit per ATM have been declining in recent years, indicating the density of ATMs per capita has likely now reached unsustainable levels (Akinmayowa & Ogbeide, 2014).

Yadav, Sijoria, Komal Singh (2016) conducted a study on improving financial inclusion through ATMs installation towards sectorial balance & sustainability. This research aims at improving the penetration of account holders in rural India for financial inclusion under the PradhanMantri Jan DhanYojana (PMJDY) by the mechanism of diversifying the already installed ATM that are underutilized in certain location of urban area owing to less than optimum verge of number of hits per day for sustainability and operations of ATMs resulting in huge financial loss to the banks and government infrastructure expenditure. Thus, a mechanism has been devised to diversify the underutilized ATMs to such a location where installation of these ATM increases the convenience, confidence & penetration of account holders for people in rural India. Thus, different parameters of diversifying an ATM such as number of prospective account holders, potential area (location) and percentage of literacy rate were taken to analyze the installation of diversified machine which was earlier used in urban location resulting in identifying the optimum number and locations of ATM so as to ensure an equitable distribution of ATM within a geographic region in rural India.

Kithinji (2017) studied on effects of digital banking strategy on financial Inclusion among commercial banks in Kenya. From the findings, it was concluded that commercial banks in Kenya had adopted diverse digital banking strategies to not only ensure their sustainability but also to reach the unbaked people in Kenya. The digital banking strategies had a significant effect on financial inclusion among commercial banks in Kenya. There was a significant positive change in financial inclusion as proxied by the number of accounts, deposits value, number of outlets and customer base, over the 5-year period. The most significant digital banking strategy is mobile banking followed by ATM banking, agency banking and online banking respectively. The study recommends that there is need for the management of the commercial banks to collaborate with the telecommunication players to enhance uptake of mobile banking. The government through relevant ministry needs to continue investing in internet connectivity to increase access to online banking. The bank management should constantly review their agency policies to increase the number of agents for increased financial inclusion. The commercial banks should continue investing on the modern ATMs that allow for diverse banking services hence increasing banking of the unbanked. Having focused on the effect of digital banking strategy on financial inclusion in Kenya a similar study should be done among other financial institutions other than banks for comparison purposes and to allow for generalization of findings. A study should also be conducted on the effect challenges facing the adoption of digital banking strategies among banks in Kenya.

Murigu (2014) researched on the usage of automated teller machines Case study: Barclays Bank of Kenya. The results indicated an overwhelming preference for the ATM against the choice of using Bank Cashier to make cash withdrawal. The results further indicated that the factors that affect the usage of ATMs includes the presence of a guard at ATM location, the preference for ATMs located at a Bank Branch, the measures taken to ensure sufficient security at ATM location, the reliability of ATM to provide services, the length of the queue at the ATM, the cleanliness of the ATM location, sufficient lighting at the ATM location, the choice of the ATM location aligned to customer preferences, the surveillance camera deployed at ATM locations and ATM located within a lobby (enclosed area) are preferred. Banks and Financial Institution need to ensure they implement the factors that affect the usage of ATMs by reviewing each ATM location before and after installation, to ensure they realize the maximum benefit from their investments. An understanding of customer needs and expectations with regard to ATM services is critical for the success of ATM services for the organization. Research has often demonstrated that responding to customer needs and resolving customer problems effectively has a strong impact on customer satisfaction, loyalty and bottom-line performance.

Waiguru (2015) conducted a study on an assessment of strategic responses adopted by Commercial Banks in Kenya to enhance customer retention. This research was as a result of despite the continued use of ATMs by commercial banks, little is known about effects of ATMs on customer retention in commercial banks in Meru town Location of ATMs in Meru town was found to have impact on customer retention. If customers did not have the locations, they preferred, then majority said that they can easily look for alternatives in most cases moving away from such banks by various ways. Number of ATMs likewise influenced customer retention. Customers required that ATMs should be enough to meet their day to day requirements. Services offered by these ATMs did not have greater negative effects on customer retention but for maximum customer retention, services provided by these ATMs should correspond to customers' requirements. In fact, customers should be taught that there are other services offered by ATMS apart from withdrawal. ATMs breakdown especially end months was high and lead to customers' dissatisfaction. Finally, some customers did not have the knowledge of carrying out some transactions and this limited there use of these ATMs and they were not happy with it.

Rotich (2015) studied on challenges of implementing financial inclusion strategies among commercial banks in Kenya. The study found that the banks in Kenya had adopted mobile banking, internet banking and agency banking. The study also found out that the banks in Kenya had increased the number of their ATM machines as well as increased their branches. The study concluded that banks face challenges in the resource availability, organizational structure and culture and advancements in the information technology. This study recommended that in the banks involve the employees in the formulation of the strategies as well as orientation on the strategies to be implemented. This study also recommended that the commercial banks in Kenya adopt new infrastructure so as to keep up with the emerging trends in ICT.

Mwiti (2016) conducted a study on the effect of alternative banking channels on financial performance of Commercial Banks in Kenya. The study established that mobile banking, ATMS banking, agency banking and internet banking affects financial performance of commercial banks positively. As a results, the study wishes to make the following recommendations for policy change: that commercial banks in Kenya should invest heavily in alternative banking channels such as mobile banking, ATMS banking, agency banking and internet banking as this will lead to improvement in the financial performance of the commercial and that the Kenyan Government through the Central bank should come up with policies that create a conducive environment for commercial banks to operate in since it will translate to economic growth of the country.

Muema (2014) studied on the effect of financial inclusion strategies on financial performance of commercial banks in Kenya. The study found that financial inclusion strategies had great effects on the financial performance of commercial banks in Kenya, as it was revealed that there was a greater variation on financial performance of commercial banks in Kenya due to changes in mobile phone banking, agency banking, micro banking, internet banking and Islamic banking, which is an indication that changes in financial performance of commercial banks in Kenya could be accounted for by mobile phone banking, agency banking, micro banking, internet banking and Islamic banking. The study found that there was a positive relationship between mobile phone banking, agency banking, micro banking, internet banking, Islamic banking and financial performance of commercial banks in Kenya.

RESEARCH METHODOLOGY

Research Philosophy

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analysed and used (Eriksson & Kovalainen, 2008). There are two prominent research philosophical leanings or paradigms; positivist and phenomenological (Easterby-Smith, Thorpe & Jackson, 2008). This study adopted the positivism philosophy because its findings can be replicated because financial inclusion should be isolated and that observations should be repeatable to confirm the findings reached.

Research Design

Research design is a master plan that specifies the methods and procedures for collecting and analyzing needed information (Jonker & Pennink, 2010). It is a series of advance decisions that taken together, form a specific master plan or model for the conduct of the investigation (Porta & Keating, 2008). The specific research designs to be adopted were descriptive and co-relational because of the causal relationship between independent and dependent variables.

Population

A population refers to an entire group of individuals, events or objects having a common observable characteristic (Gravetter & Forzano, 2012). A population describes the parameters whose characteristics the research attempts to describe. Records from the CBK (2017) indicate that there are 44 banks in Kenya as at December 2017. The population of interest of this study comprised of 44 commercial banks in Kenya.

Sampling Frame and Sample Size

Gill and Johnson (2002) describe a sampling frame as a list of members of the research population from which a random sample may be drawn. Kothari (2004) define the term sampling frame as a list that contains the names of all the elements in a universe. Polit and Beck (2003) refer to a sampling frame as the technical name for the list of the elements from which the sample is chosen from. The sampling frame for this study consist of all the licensed commercial banks and mortgage finance institutions in operation in Kenya as at December, 2017 as they appear in the Central Bank of Kenya database. Lavrakas (2008) describes a sample as a subset of elements drawn from a larger population. Kombo and Tromp (2009) also describe a sample as a collection of units chosen from the universe to represent it. For this study, the study adopted a census where all the elements of the population were included in the study because the population was small and easily accessible from Nairobi.

Data Collection Instrument

Secondary data was collected via the use of a data collection sheet (Appendix II). Secondary data from the banks was collected on; number of internet banking users, value of money and transacted through internet banking.

Data Analysis

Data analysis refers to analyzing what has been collected and making deductions and inferences. It is extracting significant variables, detecting anomalies, and testing any assumptions (Kombo & Tromo, 2009). Descriptive statistics was used to portray the sets of categories formed from the data. The mean and standard deviation on the dependent and independent constructs was used to show how clustered or dispersed the constructs are. Regression analysis is a statistical tool for the investigation of relationships between variables. The regression equation for the secondary data is ($\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \mu it}$):

Where: Y = Financial Inclusion (LN total number of customers accessing financial services); X_1 = Internet banking (LN Number of Customers, Volume transacted); X_2= ATM Banking (LN Number of ATMs, Volume transacted); µit = Error Term

RESEARCH FINDINGS AND DISCUSSIONS

Descriptive Statistics

The study sought to evaluate the efficiency of distributions channel of the commercial banks in Kenya. The study established that mean transaction through internet banking was KShs 9.98 with standard deviation of 1.87, the minimum amount transacted was KShs 6.82 with a maximum amount of KShs 13.45. Number of ATMs the commercial banks had a mean of 9.79 million with standard deviation of 1.53, the minimum ATMs of the commercial banks were 7.36 with a maximum of 12.03.

Table 1: Descriptive Statistics

Variable	Internet Banking	Number of ATMs
Mean	9.68	9.79
Std. Dev	1.87	1.53
Min	6.82	7.36
Max	13.45	12.03

Effect of Internet Banking and Financial Inclusion

Internet banking is a mode of transaction that allows clients to make transactions by use of internet. The researcher used fixed effect mode of regression to establish the effect of internet banking on commercial banks. The findings in Table 2 clearly show that coefficient of correlation was 0.708 which show that the variables had a strong relationship with financial inclusion. Internet banking has improved banking efficiency in rendering services to customers. Financial institutions in Kenya cannot ignore information systems since they play an important role in their operations because customers are conscious of technological advancements and demand higher quality services. Internet banking refers to a bank making its services available to clients using the internet as its delivery channel. Using internet banking, registered users are able to log on to the bank's website and carry out banking transactions or inquiries on their accounts (Demombynes & Thegeya 2012). The study further established that adjusted coefficient of determination was 0.4969 which translates to 49.69%. This shows that 49.69% changes in financial inclusion are influenced by financial inclusion. Thus, the residual of 50.31% can be factored by others factors beyond the scope of the current study.

Table 2: Model Summary on Internet Banking and Financial Inclusion

Model	R	R Squared	Adj. R Squared	Std. Error
1	0.708	0.5019	0.4969	1.9870

The findings in Table 3 show that the study had F Calculated of 40.306 and F Critical of 4.0847. $F_{\text{calculated}}$ > F Critical an indication that the overall regression model significantly influenced the financial inclusion. The findings further pointed out that the p value was 0.00<0.05 an indication that the internet banking significantly influenced financial inclusion.

Table 3: ANOVA on Internet Banking and Financial Inclusion

Source	SS	df	Root MSE	F	Prob > F
Model	2247.7515	1	2247.7515	40.306	0.0000
Residual	2230.73326	40	55.7683		
Total	4478.48476	41			

The study further found out that when internet banking was held constant at zero, financial inclusion would be positively influenced. A unit increase in internet banking would lead to 32.717507; increase in financial inclusion. The p value was 0.001<0.5; an indication that the variable would positively influence financial inclusion of the commercial bank. It can further be inferred that internet banking had a positive relationship with financial inclusion of the commercial banks. The findings is in support of Sarker and Wells (2003) who states that internet banking (e-banking) is the use of internet and telecommunication networks to deliver a wide range of value-added products and services to bank customers through the use of a system that allows individuals to perform banking activities at home or from their offices or over the internet leading to excessive use by customers leading to increased financial inclusion.

Table 4: Regression Coefficients on Internet Banking and Financial Inclusion

Variable	Coef.	Std. Err.	t	P>t
Constant	0.4337367	7.588332	5.06	0.005
Internet Banking	2.717507	.7697137	3.53	0.001

The resultant equation becomes;

$$\mathbf{Y = 0.4337 + 2.7175X_3}$$

Where: **Y** = Financial Inclusion; $\mathbf{X_3}$= Internet banking

H3: Internet banking has no significant effect on financial inclusion in Kenya

The findings from linear regression on effect of internet banking on financial inclusion in Table 4 show that internet banking had a beta coefficient of 2.7175 and a p value of 0.001<0.05 an indication that the variable had a positive significant influence on financial inclusion. From the findings we reject the null hypothesis and fail to reject alternative hypothesis that states that internet banking has a positive and a significant effect on financial inclusion in Kenya. The hypothesis agrees with the Technology Acceptance Model (TAM) introduced by Davis et al. (1989) that identifies the factors that influence adoption of a given type of technology in an organization.

Effect of Number of ATMs and Financial Inclusion

Number of ATMs was the last variable used on the study. The researcher sought to establish the effect of Number of ATMs on financial inclusion on commercial banks of Kenya. The findings in Table 5 show that coefficient of correlation R was 0.7234 which show that internet banking had a strong relationship with financial inclusion. Consumers continue to view ATMs as an essential banking channel, and for many consumers the ATM has replaced the in-bank experience. As a result, financial institutions continue to deploy new ATMs, even as overall the total number of ATMs declines (due to machine attrition). The number of ATM locations offered by a financial institution can represent a significant competitive asset, regardless of declining overall use. As surcharge rates for non-bank customers continues to rise, the value customers place on convenient, free access to ATMs becomes an important tool for financial institutions in attracting and retaining customers (Akinmayowa & Ogbeide, 2014). Coefficient of adjusted R square was 0.5129 which translates to 51.29%. The findings indicate that 51.29% changes in financial inclusion are caused by the internet banking. The remaining 48.71% indicates that there were other factors affecting financial inclusion that was not carried out in the study.

Table 5: Model Summary on Number of ATMs and Financial Inclusion

Model	R	R Squared	Adj. R Squared	Std. Error
1	0.7234	0.5233	0.5129	1.9870

The findings in Table 6 show that F calculated was 61.4746 and F Critical was 4.0847. Therefore, $F_{calculated}$ > F Critical an indication that the overall regression model significantly influenced the study. The findings further pointed out that the p value was $0.00<0.05$ an indication that the variable significantly influenced financial inclusion.

Table 6: ANOVA on Number of ATMs and Financial Inclusion

Source	SS	df	Root MSE	F	Prob > F
Model	2343.5963	1	2343.5963	61.4746	0.0000
Residual	2134.8884	40	38.1230		
Total	4478.48476	41			

The study pointed out that holding number of ATMs constant at zero, financial inclusion would be at 2.875036. A unit increase in number of ATMs, financial inclusion would be at 3.026102 on commercial banks. The p value was $0.0033<0.5$; an indication that number of ATMs significantly influenced financial inclusion of commercial banks of Kenya. The study findings are in support of Ogbeide and Akinmayowa (2014) who established that ATMs provided efficiency in terms of operations, reliability, security, convenience and offered privacy which was significant properties of ATMs that led to positive effects on customer satisfaction. The proliferation of ATMs accelerated when financial institutions realized that in addition to providing a cheaper and more convenient way to service customers, the surcharges associated with the ATM had the potential to add up to a significant amount of revenue (Mago & Chitokwindo, 2014).

Table 7: Regression Coefficients on Number of ATMs and Financial Inclusion

Variable	Coef.	Std. Err.	t	P>t
Constant	2.875036	9.583133	0.30	0.766
Number of ATMs	3.026102	.9674812	3.13	0.003

The resultant equation becomes;

$$\mathbf{Y = 2.87504 + 3.0261X_4}$$

Where: **Y** = Financial Inclusion; $\mathbf{X_4}$= ATM Banking

H4: ATM banking has no significant effect on financial inclusion in Kenya.

The researcher carried out a linear regression to establish the effect of ATM banking on financial inclusion in Kenya. The findings in Table 7 show that number of ATMs established a beta coefficient value of 3.02612 and a p value of $0.003<0.05$ an indication that the variable had a significant and a positive influence on financial inclusion as shown in Table 4.7. From the findings, we therefore reject the null hypothesis and fail to reject the alternative hypothesis that states that ATM banking has a positive and a significant effect on financial inclusion in Kenya. This theory is in line with Diffusion of Innovation Theory developed by Rogers (1971) to explain how new ideas and products gain momentum of acceptance over time hence consequently diffusing in the intended specific population.

CONCLUSION

The study concludes that the adoption of internet banking has enhanced the Kenyan banking industry by making it more productive and effective. Internet banking has also a strong positive relationship on the financial inclusion. The adoption of internet banking has improved the fortune of the Kenyan commercial banks.

RECOMMENDATIONS

The study recommends that policy makers should consider internet banking in formulating strategies because of the technological developments and the expected switch from physical branch networks to technologically supported banking services. The increased use of technology among the customers calls for commercial banks to develop products and services that are linked with these technological developments to enhance clients' adoption of technology. The administrators ought to focus on increased e commerce and banking advertisement for increased knowledge among customers on the e-commerce services. The commercial banks in Kenya are encouraged to benchmark with other international banks to borrow knowledge on how effective internet banking can be implemented.

The study further recommends that commercial banks ought to increase their ATM networks for increased accessibility by clients. Commercial banks ought to invest largely on ATMs machines to increased convenience to clients in remote areas. ATMs ought to be effective and operational 24 hours hence security measures should be put in place.

The study recommends that commercial banks ought to adhere to rules and regulations laid down by government. This would enhance prudential guidelines to be put in place by commercial banks. Central banks should stipulate rules laid down by the government.

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