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THE RELATIONSHIP BETWEEN ATM BANKING AND FINANCIAL DEEPENING OF COMMERCIAL BANKS IN KENYA

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Abstract

The Banking industry of the 21st century operates in a complex and competitive environment characterized by these changing technological advancement whose impact has been evident in changes in the way financial services are delivered to customers. There has been a significant increase in the number of alternative channels available for the delivery of financial services including Automated Teller Machine (ATM). The specific objective of the study was to determine the relationship between ATM banking and financial deepening of commercial banks in Kenya. The study covered all commercial banks operating in Kenya in the last 10 years. The theory that underpin the study was Agency Theory. A descriptive cross-sectional design was used. The target population for this study was all the 41 commercial banks operating in Kenya. Secondary data was collected from the commercial banks financial innovations reports and primary data was collected through semi-structured questionnaire using five point likert type scale ranging from not at all (1) to a very large extent (5). The data obtained was analyzed using descriptive statistics (mean, standard deviation, skewness and kurtosis). Regression analysis (simple regression analysis, multiple regression analysis and stepwise regression analysis) and Pearson's Product Moment Correlation analysis was used to establish the nature and magnitude of the relationships between the variables of the study and to test the hypothesized

relationships. It was established that there is a statistically significant relationship between financial innovations adoption and financial deepening of commercial banks in Kenya. Bank size as a moderating variable also had a significant influence on the relationship between financial innovations adoption and financial deepening. The study thus recommends that government must ensure that there are better policies to manage financial innovations adoption which has potential to be a very high volume financial transaction platform. Since mobile banking may over step and overtake some commercial banking functions, there is need to regulate and confine it to its main objective of remittances. The Central bank must urgently come up with regulations that ensure that all mobile banking transactions are tracked to avoid huge cash balances 'floating' outside the formal system which then threaten liquidity in the economy. Banks must come up with deliberate policies that allow them to be intermediaries or agents for the non-bank led product which has deeper access to people in order to lubricate the cash constraints and make the product more convenient.

Keywords: Financial deepening, ATM banking, Internet banking, Financial performance

INTRODUCTION

The business environment is extremely dynamic and experience rapid changes as a result of technological improvement, increased awareness and demands that banks serve their customers electronically. The banking industry globally has undergone a substantial change over the years. Banks have traditionally been in the forefront of harnessing technology to improve their products and services (Adewoye, 2013). The Banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. The impact has been evident in changes in the way financial services are delivered to customers. While the traditional functions performed by banks have remained relatively unchanged over the past few decades, the structure of the industry has witnessed dramatic change (Aker, 2010).

Over the past decade, there has been a significant increase in the number of alternative channels available for the delivery of financial services. Traditional delivery methods have given way to new delivery technologies which include e-banking products such as Internet banking, mobile banking and various Automated Teller Machine (ATM) products (Castillo, 2009). Innovations in the banking industry have changed retail banking as far as the delivery of financial services is concerned. Collaborating with hardware, software and telecommunication companies, banks are introducing new ways for consumers to access their account balances,

transfer funds, pay bills, and buy goods and services without using cash, cheques or leaving home (CBK, 2014).

Innovation is defined as the introduction of a new product to a market or the production of an existing one in a new manner. Financial innovation is primarily a product and organizational innovation which allows cost reduction for banks and/or a service improvement for the industry as a whole. Financial innovations have been used by banks as formidable strategic variables to outstrip any form of competition thus becoming an effective means by which banks can improve their performance while simultaneously being able to maintain their effectiveness in the market (Chang & Dutta, 2012). Financial innovation refers to a wide range of changes and developments affecting financial markets, introduction of new financial instruments, deepening of financial markets and introduction of new products and procedures (Cracknell, 2012).

Financial Innovations

According to Corrocher, (2006) innovations in Information Communication and Technology (ICT) have revolutionalised the financial sector resulting in novel delivery channels for financial products and services such as Automated Teller Machines (ATMs), mobile phone banking, online banking, and Agency banking. These developments leveraged on ICT are termed as electronic banking (ebanking) which is a sub-component of electronic commerce (E-commerce). E-banking has been very instrumental in improving the quality of service and financial performance of banks Branchless banking, the use of alternative delivery channels such as mobile phone banking and agent banking, is becoming increasingly popular among commercial banks in Kenya and in other developing countries (Kithuka, 2012). It is believed to reach the low income and rural individuals as well as making these individuals better off.

The Kenya financial sector has undergone tremendous changes against the background of general trend in globalization, development of the internet and the resulting explosion of e-commerce. Registrations have been enacted to provide a framework and guidelines to enhance adoption of financial innovations in Kenya (Mwangi, 2013).

The National Payments System Act of 2011 was passed with the aim of bringing all payment service providers within a single regulatory framework under the CBK including mobile phone money transfer service providers. In 2010, the agency banking guidelines were issued and in the same year, CBK started licensing deposit taking micro-finance institutions. The most notable innovation in the financial sector in Kenya includes the Automated Teller Machines (ATMs) which have become a significant feature in the banking sector. The number of ATMs has been steadily increasing since Standard Chartered Bank introduced the first ATM in Kenya

1989. By the year 2000, there were about 100 ATMs and by December, 2012 there were 2,381 ATMs spread all over the country (Okoro, 2014).

The value and amount transacted through the ATMs has steadily increased as more people adopt their use, since they are more accessible and more cost effective than visiting a physical bank. Mobile phone money transfer services were first introduced by Safaricom – Mpesa in 2007 have experienced tremendous growth in Kenya. This notable innovation in Kenya's financial system has provided greater access and increased convenience to many low-income households and microenterprises in Kenya (Ngugi, Amanja and Maana, 2009). The money transfer services are available to millions of previously underserved people, allowing them to safely send money and pay bills without having to rely exclusively on cash. The phenomenal growth in the transaction volumes and values since the rollout underlines the popularity and use of mobile money transfer platforms.

Mobile money systems consist of electronic money accounts that can be accessed via mobile phone. There are currently five mobile money companies in Kenya, four run by mobile phone operators. Safaricom's M-PESA was introduced in March 2007; Zain's-Zap was initiated in January, 2010 (now Airtel money); YuCash, was started in December, 2009 by Essar; and Orange Money (Iko Pesa) was launched in November, 2010 by Telkom Kenya. Tangaza mobile money launched in January, 2011 is a mobile money transfer not run by a mobile phone company. One can have an account linked to SIM cards for any mobile phone service provider to allow access to the Tangaza money account via the mobile phone. In view of their depth and outreach, mobile payment platforms have become an integral part of the national financial payments system as their scope in terms of the number of transactions is wider than that of traditional channels such as banks. The success in outreach of the mobile money transfer model is attributed to a large network of agents who have increased the access points for financial service. By the end of2012, Kenya had over 20 million mobile money subscribers and well over 77,000 agents across the country. M-PESA is by far the largest system accounting for more than 90% of mobile money subscriptions. By December 2012, the value of person-to-person transactions alone was about Kshs 150 billion per month and the number of mobile money customers almost 20 million, which means more than 2 out of every 3 Kenyan adults has access to mobile money.

Statement of the Problem Statement

The banking sector faces strong competition and actors are now realizing the benefits of adopting new ways of delivering banking to low income and rural individuals (FSD, 2011, 2012). Financial innovations have shown significant growth in the banking industry in Kenya (CBK

annual report, 2015). For instance data from Central Bank of Kenya (2013) indicate that, the number of automated teller machines grew from 166 in 2001 to 2091 in 2010, while mobile phone banking transactions increased from 48,000 per annum in 2007 to over 250,000 transactions per annum in 2010. Consequently, the banking sector productivity score continued to improve where the staff to customers' ratio was 1:444 in June 2011 compared to 1:60 in 1999. Total assets increased from Ksh. 387,371 million in December 1999 to Ksh. 1.9 trillion in June 2011 while customer deposits from Ksh. 235 billion. The study of the financial innovations adoption and financial deepening was chosen because as noted by CBK (2016), banks in Kenya are now facing high operational costs, management inefficiencies and liquidity difficulties which have led to the wave of mergers, acquisitions and collapse of banks witnessed recently in Kenya including Imperial bank, Chase bank, Dubai bank among others thus making a wakeup call to the Central Bank of Kenya to strengthen its bank supervision arm (CBK, 2016).

Previous studies have produced mixed and inconclusive results regarding the impact of financial innovations on banking sector. Gennaioli, Shleifer and Vishny (2012) did a study on Neglected Risks, Financial Innovation and Financial Fragility found that the benefits of financial innovation are: avoiding regulations and reducing transaction costs and therefore making capital intermediation more efficient and cheaper for clients. Lerner and Tufano (2011) in their study on consequences of financial innovations contend that existing empirical evidence and conceptual frameworks can tell more about financial innovation, but there are substantial unanswered questions in the areas of social welfare impact of financial innovations, impact of innovations on financial deepening and a lot of financial innovations research is mainly on case studies.

In Kenyan context Ngumi (2014) on effect of bank innovations on financial performance of commercial banks in Kenya found that banks profitability have significantly increased as a result of innovations adopted. Kenyoru (2013) studying effect of Financial Innovations on Financial Deepening in Kenya found that financial innovation has an insignificant positive impact on financial deepening. Both mobile money innovations and mobile banking have insignificant effects on financial deepening in Kenya. Mwangi (2013) focused on the effects of bank innovations on financial performance of commercial banks in Kenya. However the study only focused on mobile phone banking, ATM banking and online banking but failed to look at agency banking which is a key component of the bank innovations today. The studies above presents knowledge gaps to be filled.

First, the reviewed studies provided mixed conclusions on the relationship between financial innovations adoption and financial deepening with some concluding positive, some negative and others no relationship. Secondly, the banking industry in Kenya is knowledge intensive since it deals with financial services in supporting the country's investment and

currency circulation and yet from empirical review it has not received any empirical study in the area of finance specifically how financial innovations adoption is managed to enhance financial deepening. Additionally, there exists limited statistics and literature locally, on the levels of adoption of financial innovations and their effectiveness within the banking industry. Also, most of the studies used different research designs with some basing on empirical literature review to come up with conclusions as opposed to the current study which will apply both primary and secondary data to measure the interrelationships among the study variables. In addition, this study will use hierarchical regression analysis equations to examine the moderating effects of bank size on the relationship between financial innovations adoption and financial deepening of commercial banks in Kenya. It is therefore from the established knowledge gaps that inform the need to carry out a study on the relationship between financial innovations adoption on financial deepening of commercial banks in Kenya.

Objective of the Study

To determine the relationship between ATM banking and financial deepening of commercial banks in Kenya

Hypothesis of the Study

H0: ATM banking has no significant influence on the deepening of commercial banks in Kenya

LITERATURE REVIEW

Literature review was made up of a theoretical and empirical reviews based on the objectives of the study as explained.

Agency Theory

The proponents of Agency theory were Jensen and Meckling (1976). The theory analyzes the relationships between a business firm's owners and its managers who, under law, are agents for the owners. The key issues in agency theory center upon whether adequate market mechanisms exist that compel managers to act in ways that maximize the utility of a firm's owners where ownership and control are separated (Aker, 2010). Under the terms of agency theory, a principal (P) passes on authority to an agent (A) to conduct transactions and make decisions on behalf of the principal in an effort to maximize P's utility preferences.

In commercial banking, agency problems may arise from three principal sources: partial ownership of a banking firm by individuals who are both owners and managers and who, therefore, may behave differently than utility-maximizing owners alone; the presence of government-sponsored deposit insurance programs that do not differentially price insurance

coverage to reflect the risk exposure of each banking firm and that can elect to delay recognition of a bankruptcy, creating a moral hazard because management and stockholders can pursue high-risk investments in an attempt to transfer wealth from depositors to shareholders; and, the existence of informational asymmetry where owners and managers do not share the same information (Henderson and Pearson, 2010).

Automated Teller Machine banking

In the banking industry, most customers are motivated by accuracy of records and timely service delivery they receive. This has not only made the banking industry sophisticated but dynamic and ultimately becoming complex in nature with the introduction and invention of the Automated Teller Machine (ATM). Thus, many studies have investigated the effect of the ATM payment system on banking industry. Adewoye (2013), for instance, observes that ATM is an innovative customer delivery service tool that offers diversified services such as cash withdrawals, funds transfer, payment of bills, etc. The use of ATMs as a customer service delivery strategy has enabled bank customers to transact banking business using a coded ATM card, wherever an ATM facility is located, customers can access their accounts at any hour of the day.

According to Adeniran (2014), among the development in the banking services delivery is the introduction of Automated Teller Machine (ATM) that intends to decongest the banking halls as customers now can go to any nearest ATM outfit to consummate their banking transactions such as: cash withdrawal, cash deposit, bill payments, and transfer of fund between accounts. The research made use of a cross-sectional survey design that questioned respondents on ATM services. The findings revealed that, the impact of ATM services in terms of their perceived ease of use, transaction cost and service security is positive and significant. However, the result also indicates that the impact of ATM services in terms of availability of money is positive but insignificant.

In a similar study Idris, (2014), is of the view that Automated teller machine (ATM) among others was one of the services introduced by banks with the objective of providing customers quick access to their finances, as well to reduce cost of such access. The research investigated the perceived customer satisfaction towards introduction of automated teller machine (ATM) in Nigerian banks. The researcher used questionnaires and descriptive statistics to analyze the study. This covered perceived ease of use, perceived accessibility and perceived security in order to measure customer satisfaction in relation to ATM service quality. The result indicated that the customers with agreed responses on perceived ease of use and perceived accessibility has higher mean and standard deviation, while the perceived security responses

has higher mean and standard deviation of disagreed responses. Also, Komal (2009) examined the Impact of ATM on Customer Satisfaction, establishes that ATM services enhance operations and customer satisfaction in terms of flexibility of time, add value in terms of speedy handling of voluminous transactions which traditional services were unable to handle efficiently and expediently.

Massoud (2003) used a unique data-base from 1996 – 2001 period to test the effect of ATM surcharges on large versus small banks. Specifically, they examined the impact of ATM surcharges on bank customer incentives to switch accounts, from smaller banks to larger banks, in order to avoid ATM surcharges. The studies find that ATM surcharges increase the market share of deposits of large banks and decrease the market share of the smaller bank. ATM surcharges also positively impact the profitability of larger, but not smaller, banks. Ebiringa (2010) investigated on the effects of ATM infrastructure on the success of e-payment. The study is motivated by the apparent low level of satisfaction with the level of the e-payment services irrespective of the increased deployment of ATM by banks and the need to isolate the critical factors responsible for this. The study was principally based on primary data collected from users of the ATMs and a total of one thousand, one hundred and forty-one (1,141) users of ATM were sampled. The study used weighted scores of the responses to success factors identified in the literature that were analysed using the Factor analysis simulation model. The study concluded that the provision of adequate infrastructure such as power is critical for effective integration of the Nigerian banking system to the global network of electronic payment via ATMs.

Discussing on the positive impacts of Information and Communication Technology and its business value, Saloner and Shepard (1995) in a comprehensive research conducted by in USA within the time frame of 1971-1979 reveals that the interest of network effect is significant in utilizing an Automated Teller Machines (ATMs). Mohammed and Dada (2014) observe that with the dawn of ATM in Nigeria, banks' customers now have access to financial transaction outside the banking hall such as public place without the need for a cashier or bank teller. ATM is designed to perform the most important functions of banks staff through magnetic-stripe plastic card known as the ATM card, which is usually issued by the financial institution. The card contains a unique card number and some security information such as serial number, an expiration date, etc. The card is thus replacing cheques, personal attendance of the customer, banking hour's restrictions and as well as paper based verification.

According to Steve (2002), ATMs are placed not only near or inside the premises of banks, but also in locations such as shopping centers/malls, airports, grocery stores, petrol/gas stations, restaurants, or any place large numbers of people may gather. These represent two

types of ATM installations: on and off premise. On premise ATMs are typically more advanced, multi-function machines that complement an actual bank branch's capabilities and thus more expensive. Off premise machines are deployed by financial institutions and also Independent Sales Organizations (ISOs) where there is usually just a straight need for cash.

RESEARCH METHODOLOGY

Research design is the blueprint used to guide a research study to ensure that it addresses the research problem. There are three broad types of research design, that is: exploratory research design; descriptive research design; and causal research design. The research design that was used is descriptive cross-sectional design (Nachmias & Nachmias, 2004). A descriptive study involves description of phenomena or characteristics associated with a subject population (the who, what, when, where, and how of a topic). It allows estimates of the proportions of a population that has these characteristics. Discovery of associations among different variables is possible, in order to determine if the variables are independent (or unrelated) and if they are not, then to determine the strength or magnitude of the relationship.

Cross-sectional studies are carried out once and represent a snapshot at one point in time (Cooper and Schindler, 2008). The study seeks to explain the relative influence of financial innovations adoption on financial deepening of commercial banks. The study therefore employed a descriptive cross-section research design, which involves the collection of data to assess the hypothesized relationship among variables. Descriptive design helps to answer questions concerning the current status of the subjects under study (Mugenda and Mugenda, 2003) while cross-sectional survey means that elements are measured at a single point in time and that the study made use of the entire population as opposed to a sample. A cross-sectional descriptive survey was used to describe characteristics or features and to analyze their frequency, their distribution and observable phenomena. Nachmias and Nachmias (2004) contend that cross sectional studies help a researcher to establish whether significant associations among variables exist at some point in time.

A research philosophy is the founding principle on how data about a phenomenon is gathered, analyzed and used. At the heart of research philosophies lies a positivist and phenomenology philosophy. Positivism presumes that the social world exists objectively and externally and that knowledge is valid only if it is based on independent observations with the outcomes being generalizable and replicable (Ravitch & Riggan, 2012). Phenomenology on the other hand holds that meanings on reality and phenomena are constructed and reconstructed through qualitative approaches.

The study at hand was based on a positivist philosophy. According to Saunders et al, (2007) This kind of philosophy is quantitative as opposed to phenomenology which is basically a qualitative approach and also the positivist orientation is guided on the philosophy of one realism existing though as a result of limitations of humanity it may be known imperfectly and the realism within the context of probability can be discovered by researchers (Ravitch & Riggan, 2012). It allows researchers to ask more diverse and meaningful questions about entities, events, phenomena, processes and people.

The target population for this study was all the 41 commercial banks operating in Kenya. As at December 2016, the banking sector comprised of the 41 banking institutions (40 commercial banks and 1 mortgage finance company - MFC). Out of the 41banking institutions, 30 locally owned banks comprise 3 with public shareholding and 26 privately owned while 13 are foreign owned. The foreign owned financial institutions comprise of 9 locally incorporated foreign banks and 4 branches of foreign incorporated banks. The 41 registered commercial banks consist of 11 large banks which are listed on NSE and, 20 small and 15 medium banks.

The sampling frame for this study consisted of all the licensed commercial banks and mortgage finance institutions in operation in Kenya as at December, 2016 as they appear in the Central Bank of Kenya database. The study opted to undertake a census because of the small number of commercial banks in Kenya since it is possible to collect data from all the banks. However purposive sampling procedure was applied to identify the sample units that have adopted financial innovations under the study objectives. This is often accomplished by applying expert knowledge of the population to select in a non-random manner a sample of elements that represents a cross-section of the population. Burns and Grove (2003) in their study emphasize that purposeful sampling method enable the researcher to select specific subjects who will provide the most extensive information about the phenomenon being studied.

This study employed the positivist philosophy drawn from the natural sciences was applied. The philosophy comprises of the research hypothesis test. The hypothesis is developed from the theories and it is deductive. The testing is was done through the observation and the measurement of the social realities (Saunders et al., 2009). Positivism is founded and has a foundation build on values of reason, truth and validity besides being based on purely on data that is collected and measured in an empirical manner through use of quantitative and qualitative methods respectively (Wooldridge, 2012).

Beck (2003) describes that a research design is a plan that has details on how to find answers of the research objectives and research hypothesis respectively besides addressing any other challenges that were encountered during the study. Lavrakas (2008) notes that a research design is usually made up of the research structure, study frame work besides a study

blueprint that guides the formulation of the research at different stages, as from the hypotheses up to findings and conclusion before a report is made. Therefore what comes out clear is that a good research design is logical in nature and flows a particular sequence when conducting data collection and data analysis so as to ensure that proper procedure is followed (Kothari, 2004).

Descriptive research design is adopted when describing the given situation a phenomena, it takes into consideration current believes customs and also tradions in data collection (Baumgartner, Strong and Hensley 2002). Further, descriptive research also includes surveys and different enquiries with the main reason being that while conducting a descriptive cross sectional research to the research to describe the state current state of affairs objectively (Kothari, 2004).

Data was obtained from both secondary and primary sources.The data was collected from the commercial banks financial innovations reports. The banking innovations reports are an internal publication that publishes the nature of performance of financial innovation adoptions of all banks in Kenya. This information includes information regarding the nature of mobile phone banking, ATM banking, online banking and agency banking, for the years 2011 – 2016 because most financial innovations emerged from 2010 and their reports are available and also the study is geared towards measuring their performance in the current years to determine the trend for conclusive evidence to be documented. The data was reported in different units depending on the measures against which each variable will be measured. These data allowed for the calculation measures relevant to this study. This was treated as panel data since it constituted a mixture of cross-sectional as well as time series data.

Primary data was collected using semi-structured questionnaire. A questionnaire was employed for employees, (Finance manager, ICT manager or Relationship/Marketing Manager). The choice of these interviewees is informed by the nature of their jobs that makes them custodians of information about financial innovations adoption. A letter was obtained from the Department of Commerce and Economic Studies, Jomo Kenyatta University of Agriculture and Technology to enable the researcher to seek a research permit from the National Council for Science, Technology and Innovations. The researcher then contacted the banks management to seek permission to conduct the study in their organizations. The researcher clarified to the respondents the intention of the study through a cover letter with consent note to be signed.

The questionnaires was administered and collected immediately after they are filled in and confidentiality will be assured to the respondents. Both captive method and drop and pick were employed on the respondents' offices as the situation allowed. Secondary data was sought during administering of questionnaire process. If the required reports and records are not

available during the questionnaire administration, the researcher will agree with the respondents on the time that they would be available and therefore plan to visit and carry out the document analysis to get the required data. Permission from the relevant authorities would be sort to enable the researcher to make copies of some of the documents for future reference

Reliability is a measure of extent to which an instrument yields consistent results or data after repeated trials (Mugenda & Mugenda, 2003). The reliability of the instrument was estimated using Cronbach's α (alpha). Cronbach coefficient was used to assess the internal consistency or average correlation of items within the test.

The alpha coefficient values ranges from 0 to 1 and a high coefficient implies that the items correlate highly among themselves, that is, there is consistency among items in measuring the concept of interest (Mugenda & Mugenda, 2003). Cronbach's Alpha Coefficient value of 0.7 is considered strong (Nunnally, 1978). This study used the recommended value of 0.5 and more as the cutoff point. Pearson's, product moment correlation, F and t-tests was used to test for moderation and significance.

The study was a descriptive cross-sectional survey of 41 commercial Banks licensed by the Central Bank of Kenya. The questionnaires were self-administered to the Finance manager, ICT manager or Relationship/Marketing Manager of the respective commercial banks. The study targeted 41 respondents one respondent from each banks; however, the researcher received response from 40 respondents. Further scrutiny established that three questionnaires were poorly filled and hence excluded from analysis. The effective sample dropped to 37 respondents forming 90.24% response rate, which was considered adequate for analysis.

Therefore, this study's response rate is considered very good for survey research as recommended by Punch (2003) who proposes a score of 80-98% as good response rate, whereas Mugenda and Mugenda (1999) suggest a 50% response rate is adequate, 60% good and above 70% very good. The response rate further is supported by Fowler (1984) cited in Njeru, (2013) suggests that a response rate of 60% is representative of the population of the study. Such a high response rate for this study can be attributed to the use of introductory letters from the University as well as the use of trained research assistant that were equipped with skills on how to build rapport with respondents.

The study adopted the alpha coefficients ranges in value from 0 (no internal consistency) to 1 (complete internal consistency) to describe reliability factors extracted from formatted questionnaires on likert scale (rating from scale 1 to 5). The study used value of 0.70 and above as a quick rule. Test of reliability results are presented in Table 1.

Table 1: Summary of Cronbach's Alpha Reliability Coefficients

Variable	Cronbach's Alpha	Number of items	Decision
Mobile Phone banking	.840	8	Reliable
ATM banking	.817	7	Reliable
Online banking	.753	6	Reliable
Agency banking	.909	5	Reliable
Financial deepening of banks	0.801	5	Reliable

ATM banking

The study established the extent to which ATM banking attributes are manifested among the commercial banks in Kenya. Automated Teller Machine (ATM) 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. ATM allows for speedy completion of transaction, especially withdrawal even outside the country where the banker does not have a branch. It also reduces the number of customers' visit to their banks. The ATM makes it possible for a customer to withdraw from any bank close to him 24/7 and also reduce the amount of cash a customer carries around knowing he has access to money.

The results shows that the number of ATM cards issued have increased significantly. This is as shown by 86.8%. Further it is deduced that the bank has increased the number of ATMs significantly as shown by 81.6% agreeing on large and very large extent scale. It is also shown from the respondents that their banks profitability is attributed on the ATM banking. This is represented by 81.5%. However those with moderate opinion were 18.4%. Further regarding the statement that total customer transactions have increased as a result of ATM banking in our bank, 47.4% agreed to large extent, 42.1% to very large extent, 7.9% to a moderate extent and 2.6% indicating not at all. On the statement that retail banking transactions in our bank have reduced significantly as a result of ATM banking 21.1% agreed to smaller extent, 7.9% moderate extent, 28.9% large extent and 42.1% on very large extent. The statement with the highest mean was that the number of ATM cards issued have increased significantly (Mean=4.45 and standard deviation of 0.724) and the statement that ATMs in our bank have been distributed evenly across the country had the lowest mean score (Mean=3.87 and standard deviation of 0.991)

These results corroborate with various past studies. For instance Adewoye (2013) observes that ATM is an innovative customer delivery service tool that offers diversified

services such as cash withdrawals, funds transfer, payment of bills and that the use of ATMs as a customer service delivery strategy has enabled bank customers to transact banking business using a coded ATM card, wherever an ATM facility is located, customers can access their accounts at any hour of the day. Also, Komal (2009) examined the Impact of ATM on Customer Satisfaction, establishes that ATM services enhance operations and customer satisfaction in terms of flexibility of time, add value in terms of speedy handling of voluminous transactions which traditional services were unable to handle efficiently and expediently.

Another study by Adeniran (2014) also confirms that Automated Teller Machine (ATM) intends to decongest the banking halls as customers now can go to any nearest ATM outfit to consummate their banking transactions such as: cash withdrawal, cash deposit, bill payments, and transfer of fund between accounts. The findings further revealed that, the impact of ATM services in terms of their perceived ease of use, transaction cost and service security is positive and significant. However, the result also indicates that the impact of ATM services in terms of availability of money is positive but insignificant. Mohammed and Dada (2014) observe that with the dawn of ATM in Nigeria, banks' customers now have access to financial transaction outside the banking hall such as public place without the need for a cashier or bank teller.

The results therefore depicts that ATM banking is very crucial for banks in the effort of enhancing the financial deepening in the market. ATM enables customer access banking at their convenience places. This is through savings, withdrawals, mini statements, checking balances, PIN management and also convenience of not carrying bulk cash when moving from place to place. This therefore helps a bank widen their scope of operation and also charge fees for the customers transactions using ATM banking therefore able to make a profit. Those customers who would not visit the banking hall for counter transactions are also motivated to adopt fully the ATM banking. It is also depicted from the results that ATM banking enables customers to build confidence and be loyal to the bank thereby enabling financial deepening on the banks segments.

The statements depicting how ATM banking attribute manifests were presented to respondents and the findings are presented in Table 2. The results are presented in terms of percentages, mean scores and standard deviation.

Table 2 ATM Banking Attributes

Items	(1)	(2)	(3)	(4)	(5)	Mean	Std. Deviation
ATM banking							
The number of ATM cards issued have increased significantly	0.0	0.0	13.2	28.9	57.9	4.45	0.724
Our bank has increased the number of ATMs significantly	2.6	2.6	13.2	34.2	47.4	4.21	0.963
ATMs in our bank have been distributed evenly across the country	0.0	13.2	15.8	42.1	28.9	3.87	0.991
Our banks profitability is attributed on the ATM banking	0.0	0.0	18.4	28.9	52.6	4.34	0.781
Total customer transactions have increased as a result of ATM banking in our bank	2.6	0.0	7.9	47.4	42.1	4.26	0.828
Retail banking transactions in our bank have reduced significantly as a result of ATM banking	0.0	21.1	7.9	28.9	42.1	3.92	1.171
Our banks total income is attributed to investment to ATM banking in our bank	0.0	2.6	15.8	47.4	34.2	4.13	0.777

Where, 1= Not at all; 2=Small extent; 3=Moderate extent; 4=Large extent; 5=Very large extent

CONCLUSION AND RECOMMENDATIONS

The study further determined how ATM banking influences financial deepening of commercial banks in Kenya. The study found a relatively moderate and positive relationship between ATM banking constructs and financial deepening. In overall ATM banking constructs significantly influence financial deepening. The construct with highest influence are distribution criteria nationwide and number of ATM cards issued. Number of ATM machines had a weak but positive influence on financial deepening.

The study further concludes that online banking has a significant influence on the financial deepening of commercial banks in Kenya. The study found that the online banking constructs have a moderate influence on financial deepening. Amount of transactions had a positive and a significant influence on financial deepening. Number of online subscribers and number of online transactions had positive but insignificant influence on financial deepening.

This implies that how the customers transact is what matters but not number of customers subscribed on transacted.

In the light of the importance of ATM services, banks should provide increase customer education on usage of ATM machine through mass media such as, television, bill board and radio as well as paste directive posters at every ATM centres across the country. The study established that there is a positive significant relationship between ATMs usage and financial deepening. Thus to create a competitive edge and improve further deepening, the study therefore recommends that management of commercial banks and other financial institutions invest more in this technology as it contributes immensely to their financial deepening.

Commercial bank managers and government should properly adopt strategy that will encourage businessmen and general public in using automated teller machine which will improve effectiveness and efficiency of the banking sector and therefore financial deepening. Further recommendation of this study is that ATMs should be put in different locations easily accessible by customers, so that quick service and convenience is maintained hence improving financial deepening. At the same time constantly serviced in order to provide reliability of the services.

SCOPE FOR FURTHER RESEARCH

Future research efforts should also extend the scope of this study by including important contextual variables such as, competition, and/or inflation to the research framework, which may help explain some of the insignificant findings in this study. One direction for future research is to investigate the barriers that hinder commercial banks' commitment to financing the economy like resource constraint as to lack of human, financial and technological resources.

Future studies could make the use of multiple respondents from each bank to ease in the collection of data. Multiple respondents may be selected from several departments (marketing, finance) and various management levels, so that the analysis could be extended to see how employees in separate departments and at various management levels differ with respect to the major variables in this study.

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