

Mobile Banking Services with Financial Performance on Commercial Banks in Kenya

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ABSTRACT

The competition dimensions have changed following the adopting of various internet banking services that came about as a result of technological innovations such as the introduction of Automated Teller Machines (ATMs), phone banking Personal computer banking which were some of the first innovations of electronic finance. The main objective of this study was to establish the impact of mobile banking services on the financial performance of commercial banks in Kenya. The specific objectives guiding this study included to assess the influence of short message service (SMS) banking on the financial performance of commercial banks in Kenya, to establish the effect of person to person payments on the financial performance of commercial banks in Kenya, to determine the effect of bill payments on the financial performance of commercial banks in Kenya and to find out the effect of airtime top up service on the financial performance of commercial banks in Kenya. The research design that the study adopted was a descriptive research design employing quantitative research strategies. In this study the target population under investigation was all the 40 commercial banks in Kenya. Since in the current study the target population was 80 participants from all the 40 commercial banks in Kenya a census inquiry method was the best method used. Primary data for this study was collected through the use of a questionnaire that was given senior managers from all the departments of these organizations. Both quantitative and qualitative data was generated in this study. Qualitative data was analysed using content analysis whereby content of responses was looked at and responses were grouped together in relation to common patterns or themes for coherent categorization. Descriptive statistics included measures of central tendency and dispersion thus standard deviation and mean and use of absolute and relative percentage frequencies. Presentation of quantitative data was in form of graphs and tables and explanation given in prose. The study findings show that short message service had an above average positive correlation with financial performance of commercial banks and was statistically significant. Person to person had an average correlation with financial performance of commercial banks and was statistically significant. Bill payments had a strong positive correlation with financial performance of commercial banks and was statistically significant. Airtime top up service had an strong positive correlation with financial performance of commercial banks and was statistically significant. The study concludes that short message service banking has become an important part of banking, more and more people prefer to receive banking alerts through short message service which has not only improved service delivery but has had a positive impact on financial performance. Commercial banks have experienced large revenues from different activities with the banking system core among them the bill payments activities. The study recommends that it is important for commercial banks to focus more on short message service banking to lower operational costs thereby improving financial performance. Commercial banks need to consider using person to person payments to improve on their performance, they need to enhance their bill payments to get more clients paying bills using their systems so as to improve on their financial performance and that it is

important for commercial banks to put more effort on airtime top up service so as to improve on their financial performance.

Key Words: *Mobile Banking Services, Short Message Service, Person To Person Payments, Bill Payments, Airtime Top Up Service, Performance of Commercial Banks in Kenya*

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1. Introduction

Over the last decade, technological advancement have not only impacted on how firms carry out their businesses but also the way they operate (Al-Jabri, 2012). The banking industry has witnessed technological innovations which have brought the online banking and m-banking in the sector which has transformed the way financial institutions are conducting their operations. Customers have been provided many benefits arising via adoption of internet and m-banking by financial institutions which provide their banking services online and vial mobile applications. The banking industry has continued to be revolutionized through innovations in the area of information and telecommunications technology. Institutions in the financial sector have experienced main deviations over past decade. The global banking industry has had a common feature which is the increasing turbulent and competitive environment which has forced commercial banks to be at the forefront in implementing innovations so that they can survive. By adopting new strategies assisted by technological advancements banks have put more emphasis on building customer satisfaction guided by superior products and services to reduce costs (Sohail & Shanmugham, 2003).

Whereas a millions people emerging markets are offered prospective solutions through mobile banking in the form of accessing cell phones they are yet to be included in the financial mainstream. According to CGAP (2006) this access of cell phones makes it possible for people to access financial services while reducing distance, time to access banking services. This also enables the banking organization to reduce overheads and the costs related to carrying out the transactions. As a result of m-banking financial, institutions have been able to extend their facilities to new customers therefore growing their base numbers (Lee, Lee & Kim, 2007). Financial industry in Kenya has witnessed intense changes occasioned by numerous factors. These factors are policy and regulatory reforms, wider economy development, new technologies and increased competition. The amendment and passing into law the banking act of 2009 finance bill made it possible for financial institutions to use pharmaceutical companies among other business enterprises to be used as agents so that banks to improve on their financial performance. The success marriage between two primarily technology platforms thus cell phones and banking enabled the introduction of mobile banking services. Through this, commercial banks entered into partnership with firms that provided mobile service operations and utility services with the objective of providing mobile banking services to clients. The unprecedented growth and development of these services over the last few years has boosted social and economic well-being of many nations.

The Kenyan market since its introduction of m-banking in 2007 has seen significant growth in numbers. Huge investments in the mobile banking sector have been deployed by commercial banks to improve of services ever since. Continuously, banking institutions, made strategic online platforms to improve on their performance in service delivery. Owing to this fact, there is need in carrying out an investigation on m-banking and financial performance. While Kenyan banking sector has witnessed adoption of online banking platforms there is nothing to show that this had translated into performance of the banks. Apart from this, many Kenyans still do not carry out their transactions online thus affecting business of financial institutions. Profits of commercial banks are low despite the great outlook of Kenyan banks occasioned by increased operating expenses. This is in addition to transition of banking firms to innovative products and services. Commercial banks operating locally are experiencing great losses preventing them from realizing their set financial targets even with the increased financial innovations arising from increased competition from other similar products in the mobile service transfer services such as Airtel Money and Mpesa (Ngalyuka, 2013; Mimano, 2014). Equally, transaction errors in the use of banking services have reduced the commercial banks credibility and this has affected their profitability (Muiruri & Ngari, 2014).

The way people in the developing nations carry out money transfers has been transformed by mobile banking which is also poised to bring more innovations to the sector that can improve on the lives of citizens. Facilities by online banking include information on updates on the customer transactions, customer alerts and other important information. Customers will get messages on cell phones with information on the immediate transactions they have carried out in their bank accounts. These services enable the customers to make payments such as utility bill withdrawals, purchase of airtime, deposits, transfers, request of bank statements as well as performing other important banking tasks that are done in real time over mobile phones (Mutua, 2013). Anyasi and Otubu (2009) define m-banking as the term used in the performance of banking transactions using a device like a mobile. Herstatt, Tiwari and Buse (2006) defines mobile banking as any transaction that has been carried out involving transferring rights services and ownership that is initiated and/or completed through the cell phone. They further argue that mobile banking is the availment of services and products for conducting stock and transactions, access to information that is customized from the banking institution and administering accounts. Mobile banking is mostly done through the use of mobile internet and short message services but can also be made possible via the use of special programs downloaded to the mobile device by the client. Competing players like Safaricom Mpesa service and Zain (formerly Airtel) with Zap service steered the advent of online facilities in Kenya. Through the use of these services customers were able to deposit money into their wallets, were able to transfer the money to other users of these services such as business people of goods and services as well as relatives and friends which brought about suitability. The financial institutions have implemented technological advancements to be compete this is as a result of numerous challenges in the external operating environment. Banks have acknowledged the benefits of differentiation among competitors if they have to be the leaders in the sector (Daniel 1999). Many rural poor were cut out of account opening process through the banks bureaucratic systems as they were not able to qualify to own accounts. As a result of competition the banking institutions were forced to simplify their processes and came up with innovative ways of doing that one of them being the innovative m-banking products including KCB Mobibank, Equity bank M-kesho, M-shwari by the Commercial bank of Africa and Family bank Pesa pap. There are benefits customers and banks provided for via use of online banking facilities. Adoption of m-banking removes limitation of

geographical areas thus bringing convenience. M-banking also removes time challenges since banking services can be carried out all day and night providing security and management.

Alam et al. (2011) in their study argued that firm performance has four main components of financial and market performance which has items such as profitability, cycle involving cash to cash, position in the market and revenue. There is also customer-focused performance with components such as product or service performance and customer satisfaction. Human resource performance had items such as employee satisfaction and lastly organizational effectiveness with components such as level of innovation, time to market, supply chain flexibility and production. According to Greenwood and Jovanovic (1990) financial performance is looked at from the use of assets in generating organizational revenue. Financial performance results of organization can be between comparable organizations or a comparison of the same among industries of sectors together. Jayawardhera and Foley (2000) are of the opinion that financial performance can be measured in aggregation. Line items they proposed for the measure include income or flow from operations, revenues and unit sales. Profitability is also the ultimate goal for firms. To measure the profits of a firm there are a range of ratios that can be used such as Net Interest Margin, Return on Equity and Return on Asset (Murthy & Sree, 2003). Return on Asset is the main ratio that banks can use to measure their profitability. This ratio measures organizations' revenues to its total assets for a specific period (Khrawish, 2011). This ratio measures how the organization leadership to generated revenue using organizations' assets. Currently, Kenya has 40 commercial banks in the financial sector with Imperial and Chase banks under receivership. The sector has 1 mortgage finance company with 12 microfinance banks. The banking sector also has 8 representative offices of foreign banks, 14 money remittances provides, 3 Credit Reference Bureaus and 86 foreign exchange bureaus. Over the past years Kenya has seen the continued growth in the financial inclusion with the percentage if population that is within 3 kilometers of a financial access point rising from 59.0% in 2013 to over 77.0% in 2018. This has been as a result of digitization and the rising of Mobile Financial Service (MFS) as the most preferred method by larger majority to get monetary services in 2018.

2. Statement of the Problem

The competition dimensions have changed following the adopting of various internet banking services that came about through innovations such as introduction of Automated Teller Machines (ATMs), cell phone banking, Personal computer banking which were some of the first innovations of electronic finance. In recent years mobile money service providers have enhanced mobile money services (MMS) to customers to gain competitive advantage (Tchouassi, 2012). This has seen developing countries gain interest more especially players in the financial sector. In order to attain competitive advantages and to manage their operational costs, commercial institutions are adopting mobile money innovations and integrating it into their core operations. Different papers carried out in Kenya on e-banking and m-banking. For example Kigen (2010) carried out a paper on how m-banking impacts on transaction costs of microfinance institutions. He established that m-banking reduces transaction costs considerably a benefit not felt across all the banking institutions since they had a small customer base. The current paper will be dissimilar from the study of Kigen (2010) owing to fact that m-banking use has grown over time as has been the financial institutions that have employed m-banking these innovations. Another paper was carried out by Kingoo (2011) seeking to establish how e-banking relates to financial performance of financial institutions paying his attention to the microfinance institutions operating tin Nairobi. The current paper focuses on financial institutions that are commercial in

nature as a whole rather than Kingoo who concentrated on microfinance institutions. On the other hand the current study will focus on mobile banking as opposed to Kingoo who centered on electronic banking. Munaye (2009) carried out a study on the how to apply m-banking by Equity Bank as a strategic response to counter the challenges faced in its external operating environment. While this study focused on one entity the current study will focus on the whole industry. From these results, it is clear that most of the papers have focused on how m-banking impacts on commercial banks financial performance. At the same time, the context within which these studies were carried is different from the current study owing to issues in the external operating environment and time variance. It is the aim of this study to bridge this research gap. To achieve this objective the current paper sought to answer the following question: What was the impact of mobile banking on the financial performance of commercial banks in Kenya?

3. General Objective

The main objective guiding this paper was establishing the impact of mobile banking services on the financial performance of commercial banks in Kenya.

The specific objectives guiding this study included:

- i. To assess the influence of short message service (SMS) banking on the financial performance on commercial banks in Kenya.
- ii. To establish the effect of person to person payments on the financial performance on commercial banks in Kenya.
- iii. To determine the effect of bill payments on the financial performance on commercial banks in Kenya.
- iv. To find out the effect of airtime top up service on the financial performance on commercial banks in Kenya.

4. Theoretical Orientation

The current paper reviewed three theories namely technology acceptance, financial intermediation and modern economics theory.

4.1 Technology Acceptance Model

Technology Acceptance Theory (TAT) this model speaks about customers` adoption behavior usually assessed in relation to the use a specified system is predicted to give in terms of convenience usability of the system and the predicted impression of its usefulness. Previous authors researched on the fundamental construct of TAMs validity in forecasting the acceptance of individual`s and noted that TAMs fundamental construct does not wholly address the explicit effect of technology and the usability factors that actually influence the user`s acceptance (Moon & Kim, 2001). Pikkarainen, Pikkarainen, Karjaluoto and Pahnla (2004) carried out a survey in Finland to establish the actual impact of perceived usefulness and concluded that it endeared use of technologies that are friendly and independent for use in offering services by banks in twenty first century. Gerrard and Cunningham (2003) noted that customers see the usefulness of services rendered by customers to of importance to them. These services range from paying utility bills, checking account balances, loan applications, money transfer abroad, and getting pertinent mutual funds information.

4.2 Financial Intermediation Theory

The focus of the financial intermediation theory is on the process that financial institutions use to lend to deficit units what has been deposited from those units with surplus funds. According to Bisignano (1992) there are four criteria that can be used by financial intermediaries in regards to this process. First, the main categories of deposits or liabilities are specified for a fixed sum that has not relationship with the performance of the portfolio. Second, their assets have a much longer term as opposed to the deposits which are typically short-term in nature. Third, a high percentage of their liabilities are chequeable in that they can be withdrawn on demand. Fourthly, their assets and liabilities are largely not transferable to another party. He concludes that the most critical contribution of financial intermediaries is to ensure that there is a steady flow of funds from units with surplus to those with deficit. Diamond and Dybvig (1983) conducted an analysis on the provision of liquidity which involves the transforming into liquid liabilities the illiquid assets by the banking sector organizations. Their model was of the argument that all investors in market place are likely to be locked into illiquid long term investments without an intermediary that would not yield high returns those who will consumer them later since identical depositors or investors are uncertain and risk averse in relation to the timing of their future consumption needs. Creation of specialized financial commodities are seen by Scholtens and van Wensveen (2003) as the main role of financial intermediaries. They further argued that the creation can only be achieved if an intermediary is able to sell them at the prices that are higher enough to cover the costs associated with their production as well as opportunity costs and direct costs. Dues to market imperfections there is the existence of financial intermediaries. Thus, in market situation that is perfect with no information and transaction costs there will be not financial intermediaries. Information differences characterize the numerous markets that are in place between sellers and buyers. Information asymmetries are mostly pronounced in financial markets. In comparison lenders do not know their moral integrity, industriousness and collateral better than borrowers. Entrepreneurs on the other hand have inside information on their projects in which they seek financing (Leland & Pyle, 1977). Market moral hazard hampers the effective transfer of information between the participants in the market thus affects the financing of good quality projects.

4.3 Modern Economics Theory

According to the modern economics theory there have been various pathways that have been followed by millions to discover expectations, the rise of features of societies and communities like productivity gains, rate of inflation, prices, levels of national income, cultural values, social norms, stocks of various types of capital as well as decisions. Sohail and Shanmugham (2003) argued that are two important factors that make the economic theory difficult to understand. The first factor is that emergent features such as past decisions learning; practice, habit and future expectations influence the individual decisions they make at any given time. The second factor is on how well the existing economic theory and policy concern emergent features are handled thus only those fast-moving variables. More importantly therefore, those emergent properties that are slow in affecting culture, institutional arrangement and attitudes are poorly incorporated but are recognized. Tiwari, Buse and Herstatt (2006) are of the opinion that economists are aware that any successful financial achievement returns from arising from fast and dynamics leads to a slow emergent that is nearly hidden. At the same time there are changes in slower and deeper structures that can at end trigger sudden surprise of crisis. However, modern economists in their

attempt to understand how fast and slow- moving emergent features interact are frustrated by the complexities that arise.

4.4 Efficiency Structure Theory

According to the efficiency structure theory there is higher profitability is achieved through enhanced managerial scale efficiency which results in higher concentration. The commercial banks through this efficiency desire the achievement of their set financial performance. Nzongang and Atemnkeng (2006) argue that there is a different dimension in the study of bank performance resulting from balanced portfolio theory. According to this theory the overall bank's policy decisions and the decisions made by the leadership results in its profits, return on shareholders and portfolio composition. Thus, the conclusion drawn from these theories is that there exists an influence of both external and internal factors on the banks financial performance. The study further established that the bank specific factors fall under the internal factors that affect its performance. Two hypotheses are included in the efficient structure theory thus X-efficiency and the scale efficiency hypotheses. According to the X-efficiency hypothesis banking institutions that are better managed and practice control costs in addition to raising profits moves the banking institutions nearer to the best practice that is lower bound cost curve. On the other hand the scale efficiency hypothesis the argument is that banking institutions can achieve better scale in their operations therefore lowering their costs. As a result of lowered costs the banks are able to grow faster and achieve higher profits from the scale efficient.

5. Empirical Literature Review

Empirical review was on fund transfers, electronic bill payments, remote check deposits and debit or credit card use and how they relate with financial performance. Coelho (2003) carried out a study on why mobile services are important to the banking industry established that the main focus for mobile network provider and the key strategies for growth in the financial sector are use and adoption of m-banking which has potential to provide numerous facilities. The results indicate m-banking applications offer customers banking services that are faster, transmitting data, SMS services in addition to important and customer friendly services. This study did not specifically cover the impact of m-banking services on the return on investment of financial institutions which was the area focused in the current study. Another study on SMS effect on financial performance was carried out by Bamoriya and Singh (2012) who established from the study that text messages are becoming an important part of banking for many people. In the study they found out that most people opt to receive alerts from their banking institutions through text message. The message from the banking institutions to customers is on payment which is due, when payment of any nature has been made and when the customers' account is nearly empty. The study established that two-way text messaging was also becoming an option in the banking institutions since it was not possible for a customer to use SMS to contact the banks on questions that need answers for example verification of purchases as well as making transactions. A study by Gitau (2011) was carried out in Kenya to establish how financial innovation relates return on assets of banking institutions for a period that exceeded 5 years based on a quasi-experimental study plan. The 44 financial institutions operating in Kenya participated in the study whereby primary data was collected from questionnaires supplemented by past performance results of the banks financial results and empirical studies on financial

innovations. The study results established that 70% of the institutions that participated in this study had adopted process innovations, 16% of them had adopted product innovations whereas 14% of the institutions had adopted institutional innovations. As a result of these findings the study drew a conclusion that there indeed existed a significant relationship between financial innovations for example the use of short message service and the performance of financial firms. This paper concentrated on how innovations in financial services relate with firm performance whereas this current paper focused on m-banking services and how they impact on firm performance as the research gap to be filled.

Tchouassi (2012) did a paper on the benefits of mobile phone on those not banked in developing countries in East Africa. The paper found out that m-banking facilitates person to person transfers which include payments on items such as bills, purchase of airtime, remittances or disaster response, disbursements on items like operations of NGO, benefits by the government, education or health as well as payroll. However, the study concluded that for this technological and economic innovations to be a success there needs to be regulatory and policy innovations. The context of this study was Sub-Saharan Africa countries while the current study was on the Kenyan context. This study was necessary for comparison purposes. A study by Tellez and Donner (2008) did a paper m-banking on development of the economy by linking its impact adoption and use. The study results found out that m-payments/m-banking had proved to be a central innovation for the developing countries since it enables the financial institutions to get more users and lowers transfer of money from one region to another. This study focused on m-banking impact on economic development whereas this current paper concentrated on m-banking services and financial wellbeing of financial institutions. Another study in 2012 by Tchouassi was carried out on lessons in developing countries in East Africa to establish whether cell phones have worked to provide more financial services those who are not banked. The study was interested in discussing cell phones use to provision of banking services to those who are deprived and helpless and the populations who are not banked. The study found that SSA nation's households are deprived; poor that are faced with financial expenses that are high and lacked access to bank accounts therefore mobile banking services facilitated person to person payment. While the paper looked at the impact of cell phones on banking services there are still research gaps that the current study sought to fill in relation to m-banking services and performance of financial institutions.

In relation to bill payments Islam (2013) did a paper seeking to establish the impact of m-banking as an emerging issue in Bangladesh. In terms of methodology the paper used descriptive design whereby collection of data was primary sources thus personal interview method. The gathered facts of the survey were examined in several analytical tools and methods. The study found out that mobile banking delivers services that are outside the known branches through branchless banking by adopting ICT in addition to using retail agents that are non-financial who operate for 365 days. The study established a positive impact on m-banking payments, withdrawals and deposits. According to the study results mobile banking is reliable, reduced costs, speedy and carrying out operations which reduce errors from the interaction of staff in the old banking systems. However, there was a research gap this paper sought to fill since this study was conducted on mobile banking as an emerging issue in Bangladesh whereas the current study focused on mobile banking services and financial firm performance. Another paper was carried by Koivu (2002) who looking at mobile phones. They study established that mobile phone uptake in Kenya was unprecedented and that m-banking affect wellbeing of organizations, decision making behavior economic conditions. This study found out that the reliance by

information technology devices performing financial transactions which include but not limited to bill payments is steadily gaining momentum in the country. The study was in conclusion that mobile banking as an innovation increasingly endeared to the people in many ways and in nearly all the industries and economy.

A study on the m-banking by third world nations Kenya as was carried out by Wambari (2009). The study was interested in establishing the benefits of m-banking to small businesses operations and in establishing what limitations these businesses faced with tool of m-banking while highlighting there pros and cons of the tool there in. From the study findings it was established use of mobile devices is as a result normal SME practices leading to financial benefits motivated from easy use in bill of payment applications. Ndung'u (2011) analysed the Impact of mobile phone money in Kenyan banking industry between 2007 and 2011. The study documents that within just four years of mobile banking services transactions have been tremendous. It notes that mobile banking services resulted in a reduction in costs greatly led to an uptake of banking facilities hence improved performance in the sector. A survey done by Central Bank in 2008 shows a steady increase in the consumption of e-banking techniques such the ATM, EFT, online banking, mobile bill payments and credit card utilization in the Kenyan market (CBK, 2008). Scott (2006) did a paper examining bill payment service impact on m-banking industry with people and whether it had an effect on their productivity. The study was carried out among thirty-four institutions from a group of enterprises in France. This paper used a tool for the organizations targeted. The study results show that payment services were decent since it ensured that fraud and misuse of funds was not rife whereas merchandise unit of measurement was paid. The study established that the banks were peaceful being among the stakeholders thus everybody in the arena played his role without any conflict among themselves. Bolt and Humphrey (2007) note that banks have experienced large revenues from various activities within the banking system. Payment services are necessary aspects of the banking system and they account for a significant portion of the revenues earned by the firms. Revenue earning is backbone of banking business as it significantly helps banks to increase their market share to remain competitive (BIS, 2003). According to BCG report (2009), payments through the banks are ideal for growth of the sector since they form the bedrock of capital for the firms.

A study by Lang, Nolle and De Young in 2007 did a study establishing the effect of e-banking on the wellbeing of financial institutions was carried on US community financial markets whereby comparison of performance by mortar banking institutions with virtual click and mortar banks. The conclusion drawn from the study was electronic banking improves profits that e- the commercial institutions therefore growing revenue streams. Further, electronic banking driving forces or factors include maximizing operating profits such as services offered to customers like airtime purchases and minimizing the operation costs. There is still a gap that exists which the current study will seek to fill thus impact of electronic banking on financial performance of banking institutions in US which is a developed nation while the current study focuses mobile banking services and firm performance in financial sector in developing countries. Another study was carried out by Ogare (2013) examining whether electronic banking has a relationship with financial firms performance. In his paper he looked at credit and debit cards issues by the banks to customers, the number of ATMS, the usage levels of mobile banking, electronic funds transfer and point of sales terminals as components of e-banking. The study established that e-banking through services offered by the platform such purchasing of airtime has a significant and positive impact of the profits of financial institutions. Nyaga (2013) carried out a study to establish how mobile money services impact on SMEs performance among towns where data was collected

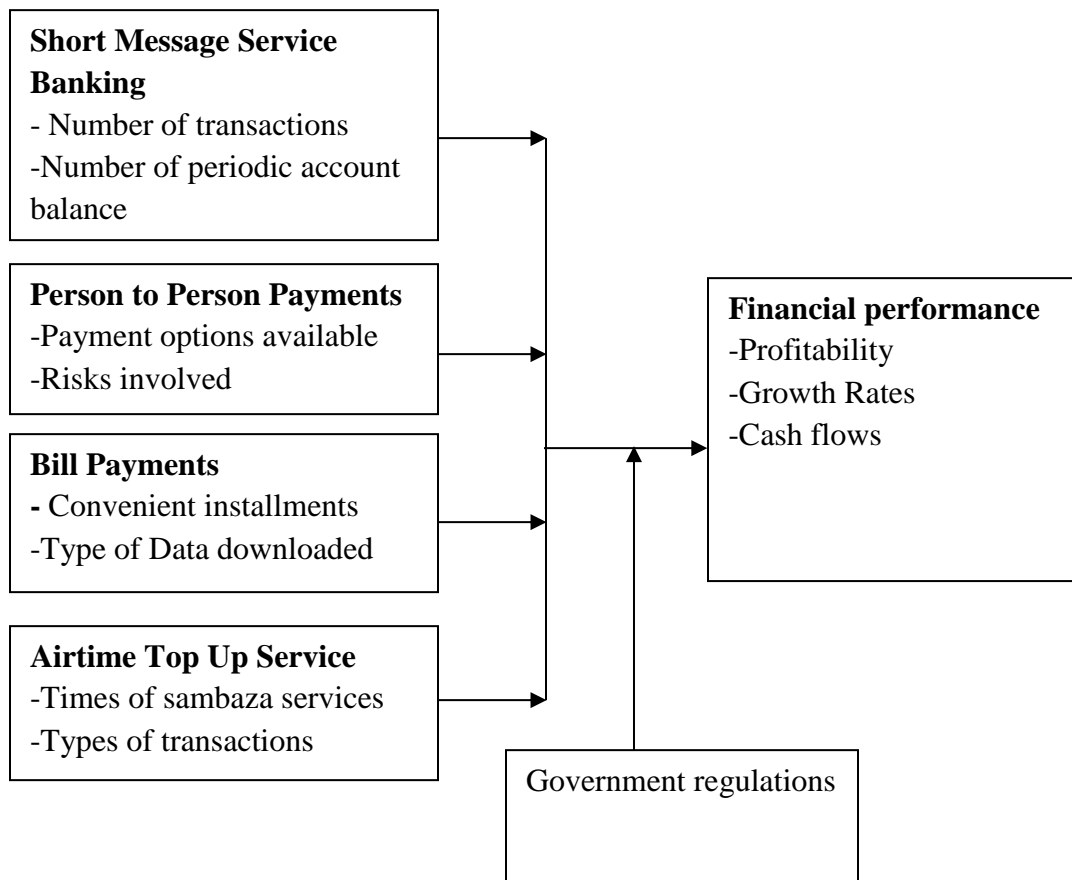
from the Municipality of Naivasha a market town based in Rift Valley Province Kenya. Through purposive sampling for convenience Naivasha Municipal Town was selected from a total of 31 municipal towns and 24 towns. Past literature review was used to explain the gaps that existed in literature. The study collected primary data so as to fill the identified gaps. The study results show that mobile money has significantly contributed to SME sector growth. According to most of the traders who participated in this study indicated that they rely on mobile money other than using financial institutions in running their operation including the purchase of airtime top up services. The study found out that all the participants in this study understood the basic functions offered by cell phones. This paper concludes the use of cell phone money services such as airtime top up had a positive impact of productivity. A research gap exists that the current paper filled since this study was on how m-banking services impact on SMEs performance while current paper sought to find out whether m-banking services impact on financial institutions performance which is a wide scope.

6. Conceptual Framework

The study was guided financial performance as the dependent variable whereas the study independent variables were: short message service banking, person to person payments, bill payments and airtime top up service.

Independent Variables

Dependent Variable



Source: Author (2019)

7. Research Methodology

The study adopted a descriptive research design employing quantitative research strategies. According to Kothari (2006) a descriptive research design is preferred because it describes the respondents in a truthful manner while information is collected in an environment that is not changing. Further this design was justified in that it presents the researcher with the opportunity to use data that is quantitative in nature to reconstruct the what is of the topic under review. Descriptive survey design was also considered the best method by Mugenda and Mugenda (2003) among social scientists interested in collecting data in its original form for purposes of describing the large population. The study targeted 40 financial institutions as shown from CBK (2018) records. However, 80 people from these institutions participated in this study thus two participants from each bank. These participants were considered in this study because their characteristics boosted data which was collected arising from the fact that category of individuals had qualities of a sample that is good thus have the data required in the investigation, easy accessibility, representation and diversity.

Since the population for the study was 80 participants taken from 40 commercial banks in Kenya census inquiry method was the best method used. As a result each and every individual targeted in the study population took part. The advantage of this method was that estimation is not subject to errors of sampling and that responses rates achieved are satisfactory. Data to be collected for the study comprised secondary and primary methods. The questionnaire was used by the researcher to collect primary data from managers of the institutions. The questionnaire was the preferred tool since it gives the researcher the chance to collect data from many people easily; it is economical and relatively easy to use. At the same time it offers quantifiable answers on the research questions. On the other hand, data from secondary sources was from the organizations under review past statements. This study questionnaire that was used had questions that are both open and close-ended in nature guided by research objectives. The study questionnaire was in two parts hence part A and B. Part A captured research questions on demographics of the participants whereas section B focused on questions on m-banking and financial performance of commercial banks. Within section B the questionnaire had questions on financial performance, fund transfers, electronic bill payments, remote check deposits and debit or credit card use.

After data was collected the questionnaires was edited for consistency and completeness before embarking on processing the responses. Qualitative and quantitative data was generated in this paper. In terms of data that was quantitative the researcher entered and coded the same into SPSS Version 22 for purposes of analysis of descriptive statistics. Content analysis was used to analyse qualitative data whereby content of responses was looked at and responses were grouped together in relation to common patterns or themes for coherent categorization. In regard to the descriptive statistics that the study employed included measures of central tendency and dispersion thus standard deviation and mean and percentage frequencies. Presentation in form of tables and graphs was used for quantitative data and explanation given in prose. Specifically, this study used Pearson's correlation and regression models in establishing how independent variables and dependent variable relate. The correlation was based on two-tailed tests in order to allow for the possibility that the influence of independent variables on the dependent variable assumed a positive or a negative direction. The researcher used 95% confidence level to test the hypothesis.

The *t*-test was used to assess whether the independent variables were statistically different from each other.

8. Data Analysis Results

The study used inferential statistics to allow the research use samples to make generalizations in relation to the study population where the samples were drawn from. This was necessary owing to the fact that sampling incurs errors which might affect perfect representation of the population. Correlation analysis was used in this study to measure the degree of relationship between the study variables. This enables the researcher to have an idea the direction and the degree of the relationship between the variables reviewed in the study. This relationship is as shown in Table 1.

Table 1 Correlation Analysis

		Financial Performance	Short Message Service	Person to Person Payments	Bill Payments	Airtime Top Up Service
Financial Performance	Pearson Correlation	1	.674**	.512**	.797**	.748**
	Sig. (2-tailed)		.000	0.000	0.000	0.000
	N	60	60	60	60	60
Short Message Service	Pearson Correlation	.674**	1	.027	.096	.035
	Sig. (2-tailed)	.000		.062	.42	.121
	N	60	60	60	60	60
Person to Person Payments	Pearson Correlation	.512	.027	1	.058	-.071
	Sig. (2-tailed)	.000	.062		.658	.056
	N	60	60	60	60	60
Bill Payments	Pearson Correlation	.797**	.096	.058	1	.062
	Sig. (2-tailed)	.000	.42	.658		.450
	N	60	60	60	60	60
Airtime Top Up Service	Pearson Correlation	.748**	.035	-.071	.062	1
	Sig. (2-tailed)	.000	.121	.056	.450	
	N	60	60	60	60	60

Correlation is significant at the 0.05 level (2-tailed).

Short message service had an above average positive correlation of 0.674 with financial performance of commercial banks. Person to person had an average correlation of 0.512 with financial performance of commercial banks. Similarly, bill payments had a strong positive correlation of 0.797 with financial performance of commercial banks. Airtime top up service had an strong positive correlation of 0.748 with financial performance of commercial banks all statistically significant at Sig. = 0.000. In order to establish the the impact of mobile banking services on the financial performance of commercial banks in Kenya multiple regression analysis was conducted. The study used SPSS Version 22 to get regression coefficients that were used to interpret the magnitude and direction of the relationship. The regression analysis model summary is as shown in Table 2.

Table 2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.854 ^a	.730	.710	.52902

- a. *Predictors: (Constant), Short message service, Person to person payments, Bill payments, Airtime top up service*
 b. *Dependent Variable: Financial Performance*

Source: Researcher Data (2019)

As shown from the study results in Table 2, the Coefficient of Multiple Determination (R^2) is 0.854 this implies that the regression line is of “*high goodness of fit*” explaining up to 85.4% of the variation in regards to financial performance of commercial banks while 22.6 was attributed to other variables that were not focused on in this study. The study applied the Analysis of Variance (ANOVA) to determine what the combined influence of the independent variables was on the dependent variable. The study findings are as shown in Table 3.

Table 3 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
¹ Regression	41.541	4	10.385	37.109	.000 ^b
Residual	15.392	55	.280		
Total	56.933	59			

- a. *Predictors: (Constant), Short message service, Person to person payments, Bill payments, Airtime top up service*
 b. *Dependent Variable: Financial Performance*

As shown from the study results in Table 4, the F static is 37.109 with a p-value of 0.000. The implication of this is that the combined influence of mobile banking services on the financial performance of commercial banks in Kenya is significant since the p-value is less than 0.05.

Table 4 Regression model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.513	.518		.990	.001
Short Message Service	-.043	.109	-.049	-.399	.000
Person to Person Payments	.126	.102	.099	1.241	.002
Bill payments	.461	.108	.528	4.276	.000
Airtime top up service	.396	.094	.457	4.204	.000

- a. *Dependent Variable: Financial performance of commercial banks*

As per the model coefficients in Table 4, the equation $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots + \beta_4X_4$ becomes; $Y = 0.513 - 0.043X_1 + 0.126X_2 + 0.461X_3 + 0.396X_4$. As shown in the study results all the predictor variables have a p-value of $<0.05\%$. The implication of this is that the influence of short message service, person to person payments, bill payments, airtime top up service on the financial performance of commercial banks in Kenya is significant since the p-value is less than 0.05. As shown by the regression line established above, holding all the entire independent variable constant, financial performance of commercial banks in Kenya will be 0.513. As shown from the study results, holding all other variables constant, a decrease in short message service will lead to a decrease on financial performance of commercial banks in Kenya by 0.043. This study is in agreement with the findings of Bamoriya and Singh (2012) who established from the study that text messages are becoming an important part of banking for many people. In the study they found out that most people opt to receive alerts from their banking institutions through text message. The message from the banking institutions to customers is on payment which is due, when payment of any nature has been made and when the customers' account is nearly empty. The study established that two-way text messaging was also becoming an option in the banking institutions since it was not possible for a customer to use SMS to contact the banks on questions that need answers for example verification of purchases as well as making transactions. As shown from the regression results, holding all the other variables constant, an increase in person to person payments will lead to an increase on financial performance of commercial banks in Kenya by 0.126. This study concurs with the findings of Tellez and Donner (2008) who did a paper m-banking on development of the economy by linking its impact adoption and use. The study results found out that m-payments/m-banking had proved to be a central innovation for the developing countries since it enables the financial institutions to get more users and lowers transfer of money from one region to another.

On the other hand, holding all other variables at zero, an increase in bill payments will lead to an increase in financial performance of commercial banks in Kenya by 0.461. This study agrees with the findings of Koivu (2002) who established that mobile phone uptake in Kenya was unprecedented and that m-banking affect wellbeing of organizations, decision making behavior economic conditions. This study found out that the reliance by information technology devices performing financial transactions which include but not limited to bill payments is steadily gaining momentum in the country. The study was in conclusion that mobile banking as an innovation increasingly endeared to the people in many ways and in nearly all the industries and economy. The regression results also indicate that taking all other predictor variables constant, an increase in airtime top up service will lead to an increase financial performance of commercial banks in Kenya by 0.396. This study is in tandem with the findings of Ogare (2013) who examined whether electronic banking has a relationship with financial firms performance. In his paper he looked at credit and debit cards issues by the banks to customers, the number of ATMS, the usage levels of mobile banking, electronic funds transfer and point of sales terminals as components of e-banking. The study established that e-banking through services offered by the platform such purchasing of airtime has a significant and positive impact of the profits of financial institutions.

9. Conclusions

Owing to the study results the following conclusions based on the findings were drawn. The study concludes that short message service banking has become an important part of banking, more and more people prefer to receive banking alerts through short message service which has

not only improved service delivery but has had a positive impact on financial performance. The use of short message service banking by institutions has had a positive influence on financial performance since this has made basic financial services by customers to be more accessible through minimization of distance and time to the nearest retail bank branches, reduces the bank's overheads as well as costs relating to transactions. The study concludes that there was an influence on financial performance of commercial banks as a result of using person to person payments technique in mobile banking. Person to person payments greatly influence financial inclusion in commercial banks thus affecting financial performance. The study concludes that commercial banks have experiences large revenues from different activities with the banking system core among them the bill payments activities. New payment technologies like bill payments have not only reduced the settlement time required for transactions but also financial costs that may arise from the processing of bill payments. People rely on mobile money more than using financial institutions in running their operation including the purchase of airtime top up services and that commercial banks in Kenya have boosted their earning capability and controlling costs through adoption of innovations like the mobile banking and the use of services such as airtime top up service. Mobile banking services such as airtime top up service has enabled commercial banks to increase their sales volumes, reducing costs of distribution and increasing customer satisfaction which ends up influencing financial performance positively.

10. Recommendations


The study recommends that it is important for commercial banks to focus more on short message service banking to lower operational costs thereby improving financial performance. For the second objective the study recommends that commercial banks need to consider using person to person payments to improve on their performance. The study recommends that commercial banks need to enhance their bill payments to get more clients paying bills using their systems so as to improve on their financial performance. The study recommends that it is important for commercial banks to put more effort on airtime top up service so as to improve on their financial performance.

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