RELATIONSHIP BETWEEN MOBILE BANKING AND FINANCIAL INCLUSION IN KENYA

BY

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DECLARATION

This Research Project is my original work and has not been presented in any other University.

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DEDICATION

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<td>Automatic Teller Machine</td>
</tr>
<tr>
<td>CCK</td>
<td>Communication commission of Kenya</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
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<td>FSAP</td>
<td>Financial Sector Assessment Program</td>
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<td>ICT</td>
<td>Information Communication Technology</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<td>MDGs</td>
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<td>MFI</td>
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ABSTRACT

Over the last decade, financial inclusion has made its way into the center stage of development policy and has been every government’s goal in the developing economies. Many countries are working on various strategies and regulatory framework to ensure they reach all those excluded financially. For optimal resource mobilization and social economic balance, every government focus is to have an efficient and inclusive financial system for the purpose of equity in resource mobilization. With private and commercial institutions efforts to align various technological evolutions, the government is also trying to explore and implement innovative models that will deepen Kenya’s financial sector to support savings, transactions and investment growth. The study sought to determine the relationship between mobile banking and financial inclusion in Kenya. The study used secondary data obtained from Central Bank of Kenya and communication authority of Kenya for the period 2006 to 2014. Descriptive research design was adopted by the study. Multiple regression analysis was used to obtain the relationship between financial inclusion and mobile banking services. The significance of the results obtained was determined using analysis of the variance. The study found that mobile money transfer services have positive effect on financial inclusion in Kenya. The study further found that mobile banking services have contributed significantly to deepening financial markets mostly out of financial products related to mobile money developed. Mobile banking services were also found to have contributed significantly to financial access in Kenya. The study recommended that the Central Bank of Kenya to formulate policies to guide the operations of mobile money services and ensure that mobile operators charge lowest costs, consequently promoting penetration of mobile money services.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Mobile banking is any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device (Tiwari, Buse and Herstatt 2006). They further indicate that mobile banking refers to provision and availment of bank-related financial services with the help of mobile telecommunication devices.

Over the past few years, advancement in information technology has changed the way organizations operate and conduct their business (Al-Jabri, 2012). Technological advancement has brought about the evolution of m-banking and online banking in the banking industry which has revolutionized the manner in which commercial banks conduct their business. Internet and m-banking has not only made financial organization provide banking services online and via mobile but has also provided customer with easy access to financial services and other benefits.

The movement from traditional branch banking to mobile banking has caused banks to come up with strategies to attract more customers and retain existing ones. The desire to reduce both operational, administrative cost and competition has driven banks to adopt mobile banking. However cost reduction is only realizable with an increase in customer adoption (Bradley and Stewart, 2003).
Technological advancements in the area of telecommunications and information technology have continued to revolutionize the banking industry. The delivery of financial services has experienced major changes during the past few years. A feature of the banking industry across the globe has been that it is increasingly becoming turbulent and competitive thereby forcing commercial banks to innovate for survival. Banks, aided by technological developments, have responded to the challenges by adopting new strategies which emphasize on attempting to build customer satisfaction through offering better products and services and at the same time to minimize operation costs (Sohail and Shanmugham, 2003).

An appropriate banking environment is considered a key pillar as well as enabler of Financial inclusivity (Koivu, 2002). The banking industry has been subject to this technological change (Bradley and Stewart 2003). In order to be in line with the changes in the operating environment, it is apparent that bank in Kenya and other financial institution have to embrace mobile banking in meeting customer demands (Tiwari and Buse, 2006). Providing banking through internet has proved fruitful in terms of cost control by employing automated ways of transacting other than the traditional method of labour intensive therefore higher productivity and profitability. Consequently, growing partnership in financial institution and other service providers has lead to an increase in m-banking as customers can transact and clear utility bills through their mobile.

1.1.1 Mobile Banking

Mobile banking is the provision or availment of banking services with the help of mobile devices. (Agrawal, 2009). The proliferation of information and communication technology
has brought with it tremendous innovation in the banking industry. Currently, mobile banking is an integral part of modern banking in many countries. In most countries, more than half of the population already use mobile banking and the market is still growing (Atman, 2013).

In some countries like in Brazil, banks have successfully expanded their outreach by hiring local “correspondents” to offer their services. By using retail points as cash merchants, banks, telecom companies, and other providers can offer saving services in a commercially viable way and at the same time, reduce fixed costs and encourage customers to use the service more often, thus providing access to additional revenue sources (Atman, 2013).

The client benefit from the mobile banks with lower transaction cost, service closer to client’s home; longer operating hours, shorter lines than in branches, more accessible for illiterates and the very poor who might feel intimidated in branches. Increased sales from additional foot-traffic, Differentiation from other businesses, Reputation from affiliation with well-known financial institution, Additional revenue from commissions and incentives, Increased customer base and market share, Increased coverage with low-cost solution in areas with potentially less number and volume of transactions, Increased revenue from additional investment, interest, and fee income, Improved indirect branch productivity by reducing congestion (Cohen, 2002).

The banking sector has had to adopt technological change to remain competitive. In search of competitive advantages in the technological financial service industry, bank have acknowledged value to differentiate themselves from others financial institution
through new service distribution channels (Daniel 1999). Banks bureaucratic process of account opening cut out many rural poor as they could not qualify to own accounts. With competition banks had to simplify the process and had to come up with innovative ways of doing so.

Mobile banking provides a number of advantages for both banks and customers. Mobile banking removes geographical limitation to customers and therefore bringing convenience. There is no time limitation i.e. banking maybe performed throughout the day and in any place. Mobile banking also provides efficient cash management and security of cash.

1.1.2 Financial Inclusion

According to Demirguc (2008) financial inclusion or broad access to financial services is defined as an absence of price and non price barriers in the use of financial services. In order for a country to attain full inclusion the following are of great importance. Financial services should be accessible to all: this is often seen as the goal of financial inclusion. Financial services provided should also be of quality: quality financial inclusion includes the following traits: affordability, convenience, product-fit, safety, dignity of treatment, and client protection. Financial inclusion involves provision of the full suite of basic financial services; this refers to group of core financial services that includes basic credit, savings, insurance and payment services (Gardeva and Rhyne, 2011).

Financial exclusion has been defined it in the context of a larger issue of social exclusion of certain groups of people from the mainstream of the society. Leyshon and Thrift (1995) define financial exclusion as referring to those processes that serve to prevent certain social groups and individuals from gaining access to the formal financial system.
Carbo, Gardener and Molyneux (2005) have defined financial exclusion as broadly the inability of some societal groups to access the financial system. According to Conroy (2005), financial exclusion is a process that prevents poor and disadvantaged social groups from gaining access to the formal financial systems of their countries. According to Mohan (2006), financial exclusion signifies the lack of access by certain segments of the society to appropriate, low-cost, fair and safe financial products and services from mainstream providers.

Millions of people across the developing world do not have access to banking services. Faced with barriers related to cost, geography and education, these individuals have no way of securely transferring funds, saving money, insurance or accessing credit (BASA, 2003). These four services serve different needs that each household encounters, and ensuring access to this product range is an important goal of financial inclusion. Credit allows households to use future income to manage current vulnerabilities or to capitalize on investment opportunities. Savings provide a safe and value-retaining place where households can store funds, allowing them to tap into "past income" as needed. Insurance, protects against vulnerability to shocks (e.g. death, illness, or disability in the family). Payments services allow people to carry out financial transactions without having to be face-to-face.

Access has many dimensions: services need to be available when desired, and products need to be tailored to specific needs; the prices for these services need to be affordable, including all non price costs, such as having to travel a long distance to a bank branch; and, most important, it should also make business sense, translate into profits for the providers of these services, and therefore be available on a continuous basis. Access is
difficult to measure. Usage is often used as a proxy, although it can underestimate the number of households that have access because it fails to capture those who currently have access to a financial service but are not using it (Demirguc, Levine and Ross 2009).

1.1.3 Mobile Banking and Financial Inclusion

Mobile money contributes to financial Inclusion process by providing range of markets instruments and enabling access to financial services. Mobile banking as The most common mobile money concept enables users to perform banking transactions such as check of account balance, fund transfers, bill payments via mobile phones. Mobile saving services are an innovative ways of encouraging a culture of saving without requiring minimum account balances and other traditional banking fees (Gaurav, 2007).

Mobile credit services are being set up to provide micro loans to low-income individuals as an addition to traditional credit and savings groups. Mobile banking is helping mobile operators and the financial industry collaborate to deliver affordable financial services that provide safety, security and convenience to millions of previously unbanked customers. Mobile banking provides a platform for efficient exchange of goods and services by reducing transactions time at the point of sale, providing versatility by enabling customers to use a single device for multiple services (Jenkins, 2008).

Transactions are carried out at lower costs and at a much higher accessibility level. Today, mobile subscribers are using mobile banking for transactions and services such as domestic and international remittances, bill payments, payroll deposit, loan receipt and repayment. It also facilitates the flow of money from one party to another using a communications infrastructure that already connects billions of customers around the
world. According to Jack and Suri (2010), mobile banking is enabling remittances to increase risk sharing and improve consumption smoothing. It reduces the cost and risk inherent in dealing with cash. Mobile airtime also acts as new market instrument where phone companies have allowed individuals to purchase “airtime” and to send this credit to other users. Recipient user hence can sell the received airtime to a local broker/agent in return for cash, or indeed for goods and services, thus effecting a transfer of purchasing power from the initial sender to the recipient. Mobile phone companies recognized the opportunity (after all, there are more than 3 billion people in the world without access to banking services) and a new market was born.

1.1.4 Mobile Banking and Financial Inclusion In Kenya

Kenya has succeeded in significantly expanding the reach of financial services over the past several years. If mobile money transfer services, savings and credit cooperatives (SACCOs) and micro finance institutions (MFIs) are included, formal financial inclusion increased from 26.4 percent in 2006 to 40.5 percent in 2009. (CBK annual report, 2012). There are several factors that have contributed to greater level of inclusion; the expanding reach of three major types of financial service providers, the identification of financial inclusion as a national priority (as stated in the Kenya vision 2030 national planning document) and the accessibility brought about by innovative electronic payment systems.

Currently, Kenya has got only forty three commercial banks, eight Deposit Taking Microfinance Institutions of which both have only a total of four million with bank accounts (CBK annual report, 2012) Even with increased agency banking; the numbers did not grow due to the systemic perception and experience most unbanked have with the
banking institutions. All the players in the banking industry are therefore working hard to ensure they closely partner with the mobile money transfer services not only to maintain the existing customers but also reach the extra customers who would not have been reached if the banks remained complacent (Maina, 2009) In Kenya, the upper rift, parts of Eastern and North eastern provide a vast population of financially excluded population which provides mobile service providers with the opportunity to get more footage and offer these services at low cost and minimal paperwork. They also partner with banks in order to offer fully financial products to the population at and transform lives.

In 2012, Safaricom Ltd, a leading mobile service provider in Kenya in partnership with Commercial Bank of Africa, one of the Kenya registered commercial bank, launched a service dubbed M-SHWARI that automatically opens a bank account for M-PESA registered customers and operates fully like a bank account. With such partnership, the society will also gain with more population included in the formal financial sector (Kabbucho and Coetzee, 2010)

1.2 Research Problem

Mobile banking has experienced fast adoption and has been credited for drastic reduction of financial transaction costs, serving the unbanked population and risk diversification. However, the effects of mobile banking to the financial sector and economy at macro levels have not been studied. This calls for a macro approach of mobile banking with specific focus to financial inclusion which is a key indicator of financial development and economic development. This study will attempt to analyze mobile banking data in relation to financial inclusion variables to establish possible relationship that exist between the two concepts.
The advent of the mobile banking services has revolutionized the way the financial services industry conducts business, empowering organizations with new business models and new ways to offer 24 hour accessibility to their customers. The ability to offer financial transactions over the mobile phone has also created new players in the financial services industry, such as mobile phone service providers who offer personalized services. This is evident with the prevalent use of M-pesa, Airtel Money and Orange Money. The real time money transfer over the mobile phones enables individuals in areas with no demand to acquire demand within seconds.

The financial system in Kenya still remains under-developed as compared to other developing economies. With the invention of mobile banking, Kenya has experienced positive growth in the financial sector in the recent years. Financial services including credit, payment of services and savings are currently being offered to individuals via mobile banking thus broadening access to financial services. Despite the increase in use of mobile banking with adults using it standing at 68%, highest figure in the world, Kenya is still classified as low income with nations such as United Kingdom with a 0% mobile banking usage classified as high income nations, Demirguc and Klapper (2012).

Several studies have been done on mobile phone banking and financial inclusion concepts. Kigen (2011) studied the impact of mobile banking on transaction costs of microfinance institutions using a survey of microfinance institutions in Nairobi. In his findings, mobile banking drastically reduced the transaction costs of microfinance institutions (MFI) thereby increasing the penetration level of the MFIs. Otieno (2008) studied challenges in the implementation of mobile banking information systems in
commercial banks in Kenya and established that the key challenges included high levels of online insecurities, fraud and low acceptance by the market. Wambari (2009) studied mobile banking in developing countries using a case study on Kenya where he established that m-banking has a positive impact on transfers, payments, deposits and withdrawals in financial transactions of small businesses.

From the above discussions, many studies had been undertaken in mobile banking. However, no known studies had been done to ascertain the relationship between mobile banking and financial inclusion in Kenya. This study therefore, aimed to filling the identified gap in knowledge concerning the relationship between mobile banking and financial inclusion in Kenya. Hence, the study sought to answer one research question: what is the relationship between mobile banking and financial inclusion in Kenya?

1.3 Research Objective

To establish the relationship between mobile banking and financial inclusion in major mobile banking services providers in Kenya.

1.4 Value of the Study

The study will be of value to the general public by informing them about the benefits of mobile banking on Financial inclusion. This follows the maxim that ‘information is power’ and hence empowers the users as well as providers of the service gearing towards improved services.
For the policy makers and agencies like the Central bank of Kenya (CBK), the findings of this study would be important in informing the policy formulation especially with regard to regulating the mobile banking services. The research findings add dimension that may help improve policy direction with regard to regulation of M-banking as well as factors that spur financial inclusion.

As for scholars and academicians, this study would be important in providing information on mobile banking and financial inclusion. Nevertheless, the research also suggests areas of further studies where future scholars and researchers can seek more knowledge or better still corroborate emerging theories.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
The fundamental purpose of this chapter was to provide insights on the theory and other scholarly work and studies done in the same field. This chapter provides a review of the evolution of mobile banking services and its relationship with financial inclusion in the developing economies. Finally, to review the empirical studies on the subject of Mobile banking and the relationship it has on financial inclusion in Kenya.

2.2 Theoretical Review
The section will review key theories that explain mobile banking and financial inclusion. The theories are; demand and supply side twin theory, financial intermediation theory and productivity gains and reduction in transaction costs.

2.2.1 Demand and Supply Side Twin Theory
Demand & supply side Twin Theory is a model of twin pillar between financial inclusion and financial literacy (Chakrabarty, 2011) While financial inclusion acts from supply side providing the financial market/services what people demand, financial literacy stimulates the demand side and the two aspects must be present and co-exist in an inclusive growing economy. Gol, (2007) observed that the development of rural economy is imperative for inclusive and equitable growth and to unlock huge potential of the population that is presently trapped in poverty with its associated deprivations.
According to Mehrotra et al, (2009) there are supply side and demand side factors driving inclusive growth in the financial economy. The banks largely are expected to mitigate the supply side processes that prevent poor and disadvantaged social groups from gaining access to the financial system. Despite the risk, financing of first time entrepreneurs is a must for financial inclusion and growth. Apart from the supply side factors, demand side factors, such as lower income and /or asset holdings also have a significant bearing on financial inclusion. Owing to difficulties in accessing formal sources of credit, poor individuals and small and macro enterprises usually rely on their personal savings or internal sources to invest in health, education, housing, and entrepreneurial activities to make use of growth opportunities. Thorat (2008) observes that while there is no doubt that there is a need to stimulate the demand for formal financial sector products among the financially excluded consumers, appropriate and effective supply side interventions hold the key to increasing financial inclusion, especially in the short term. The current challenges in the supply side include products not customized to informal sector, rigid processes with complex and intensive documentation deter most of the financially excluded population, technology availability and acceptance, outreach by available financial institutions.

2.2.2 Financial Intermediation Theory

Financial intermediation is the extent to which financial institutions bring deficit spending units and surplus spending units together (Ndebbio, 2004). An important question that theories try to answer is why do investors first lend to banks who then lend to borrowers, instead of lending directly? Arguments point out to the fact that banks are able to effectively monitor borrowers and thus play the role of delegated monitoring
(Diamond, 1984). Diamond shows that reduced monitoring costs are a source of this comparative advantage. Diamond argues that intermediaries provide services by issuing secondary financial assets to buy primary financial assets. If an intermediary provided no services, investors who buy the secondary securities issued by the intermediary might as well purchase the primary securities directly and save the intermediary’s costs.

Financial market frictions can be the critical mechanism for generating persistent income inequality or poverty traps. These market frictions include information asymmetry and transaction costs and play a central role, influencing key decisions regarding human and physical capital accumulation and occupational choices. For example according to (Demirgüç-Kunt, Asli, Beck, and Honohan. 2008) in theories stressing capital accumulation, financial market imperfections determine the extent to which the poor can borrow to invest in schooling or physical capital. In theories stressing entrepreneurship, financial market imperfections determine the extent to which talented but poor individuals. In conclusion, majority of the theories have established a positive link between financial development and economic growth.

2.2.3 Productivity Gains and Reduction in Transaction Costs

ICT improve firms’ productivity by allowing firms to adopt flexible structures and locations. The increased geographic dispersion is a source of productivity gains as it also allows firms to exploit comparative advantages and save on operational costs for the business. Further productivity gains also come from better management, through better intra-firm communication, and increased flexibility, owing to the removal of physical constraints on organizational communication (Jenkins, 2008). Small businesses can also
increase their productivity with ICT. Voice applications reduce unproductive traveling time and improve logistics, leading to faster and more efficient decision making. They also empower small and medium-size enterprises, through increased flexibility & adaptability in both operational and financial engineering (Lewin and Sweet, 2005).

Indirect social returns also come from use of mobile telecommunications innovations and further improve market functioning and increases trade. Investments in Mobile telecommunications have contributed towards focus to reduce costs because better communication systems lower transaction costs (Datta and Agarwal, 2004, and Waverman, Meschi, and Fuss, 2005). By reducing the cost of retrieving & passing financial information through the GSM mobile handset, improve information flows, increase arbitrage abilities, and facilitate price discovery. They allow better functioning markets and regulation of supply and demand. Therefore it increases information regarding prices (of commodities, for example), job opportunities, and markets (Sarma and Pias, 2004). Moreover, good communication networks substitute for costly physical transport and therefore widen networks (of buyers and suppliers) and markets.

Jenkins (2008) show that reduced transaction costs from highly innovated ICT favor trade because it gives developing countries opportunities to tap into global markets and remittances and increase financial inclusion landscape. The development of e-commerce fostered by ICT development increases efficiency and opens markets for developing countries. Businesses, such as handicrafts or ecotourism, reach global audiences, marketplaces become digital, and transactions are automated. Trade in services such as back office support or data entry and software management also benefit from new
opportunities on mobile platforms allow the outsourcing of information-intensive administrative and technical functions.

**2.3 Determinants of Financial Inclusion**

One common determinant of financial inclusion that is by and large accepted universally is the percentage of adult population having bank accounts. The number of savings accounts as percent of number of households is considered to be a better indicator of banking penetration than other deposit accounts as percent of number of households, (Agarwal, 2008). In understanding the extent of financial inclusion, it is imperative to know the coverage of population by bank offices in both rural and urban areas. Greater financial inclusion by itself does not imply greater welfare. The underlying assumption is that access to formal financial services is less taxing on vulnerable groups who have to pay much higher cost for informal services – this is something that could be tested.

According to Kempson et al. (2004), financial inclusion can be measured through three basic dimensions; banking penetration, and availability of the banking services and usage of banking system. The variables include; the size of the, banked population, i.e. the proportion of people having a bank account is a measure of the banking penetration of the system, number of branch per 1000 km 2 , number of bank ATM per 1000km 2 , average size of loan to GDP per capita, number of deposits per 1000 people, average size of deposits to GDP per capita and total deposits as a percentage of GDP. In the present index, they have provided the following weights–1 for the index of banking penetration, 0.5 for the index of availability and 0.5 for the index of usage. Financial inclusion should also be measured not only by the number of bank accounts held by the weaker sections, but also by the amounts borrowed by them.
2.4 Review of Empirical Studies

Musau (2002) researched the impact of financial liberalization on selected financial sector development indicators in Kenya. Musau established that financial liberalization increased the penetration level of financial services in Kenya. Of the selected financial sector developments, Microfinance institutions played a major role in promoting financial sector development.

Waverman, Meschi, and Fuss (2005) used a modified version of Sarma and Pias (2011) for 92 countries between 1980 and 2003 and show that mobiles in developing countries play the same role as fixed lines played in the 1970s and 1980s in developed countries. In developing countries, mobile phones are substitutes for fixed lines; in developed countries they are complements for fixed lines. Their impacts on growth are positive and significant—twice as large as their impacts in developed countries. The starting hypothesis is that mobile phone rollout has greater effects on economic growth in developing countries because mobiles have more network effects and have more effects on mobility than in developed countries. They also found that the price and income elasticity’s of mobile phone demand are superior to one in developing countries.

Agboola (2006), in his study on Information and Communication Technology (ICT) in Banking operations in Nigeria using the nature and degree of adoption of innovative technologies; degree of utilization of the identified technologies; and the impact of the adoption of ICT devices on banks, found out that technology was the main driving force of competition in the banking industry. During his study he witnessed increase in the adoption of ATMs, EFT, smart cards, electronic home and office banking and telephone
banking. He indicates that adoption of ICT improves the banks’ image and leads to a wider, faster and more efficient market. He asserts that it is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services, or otherwise lose out to their competitors. Laha (2011) sought to identify the broad determinants of financial inclusion in some selected districts of west Bengal, India. Empirical results using Bivariate Probit model showed that asset level of the household, as determined by the operated land holding, significantly enhances the probability of becoming a bank customers and the existence of information asymmetry in financial services acts as an obstacle to the process of financial inclusion.

Sharma (2008), through cross-country empirical study examined a close relationship between financial inclusion and development in Pakistan. Further, the study found a positive relation between financial inclusion and different socio-economic variables like income, inequality, literacy, physical infrastructures.

Kathuria, Uppal and Mamta (2009) assess the impact of mobile penetration on economic growth across Indian states. They estimated a structural model with three equations for 19 Indian states from 2000 to 2008. They specifically examined the links through which mobile phones affect growth and the constraints, if any, that limit their impact. They found that Indian states with higher mobile penetration rates can be expected to grow faster, and that there is a critical mass, at a penetration rate of 25 percent, beyond which the impact of mobile phones on growth is amplified by network effects. Telecom networks, more than any other infrastructure, are subject to network effects: the growth impact is larger when a significant threshold network size is achieved.
Lee, Levendis, and Gutierrez (2009) are among the rare studies that have focused on the effects of mobile phones on economic growth in sub-Saharan Africa. They corrected the potential endogeneity between economic growth and telephone expansion by using the generalized method of moments. They also considered varying degrees of substitutability between mobile phones and landlines. They found indeed that the marginal impact of mobile telecommunication services is even greater where landline phones are rare. The channels through which telecommunications stimulate growth, financial inclusion, for instance, are not investigated. Further, their regressions may be subject to statistical shortcomings because of the externalities like government involvement.

Hasan, Schmiedel and Song (2009) in their study to provide a combined and integrated view of the importance and significance of retail payments for bank performance using country level retail payment service data across 27 EU markets found out that countries with more developed retail payment services, banks perform better, in terms of both their accounting ratios and their profit and cost efficiency. They further found that the relationship is stronger in countries with higher levels of retail payment transaction equipment, like ATMs correspondence (Agency) banking and POS terminals.

Sarma and Pais (2010) examined the relationship between financial inclusion and development by empirically identifying country specific factors that are associated with the level of financial inclusion. They found that levels of human development and financial inclusion in a country move closely with each other. Among socio-economic and infrastructure related factors, income, inequality, literacy, urbanization and physical
infrastructure for connectivity and information were important. The health of the banking sector did not seem to have an unambiguous effect on financial inclusion whereas ownership pattern did seem to matter.

Sarma and Pias (2011) conducted a study of a system of equations that endogenize economic growth and telecom penetration, while extending the analysis to mobile phones. They undertake separate estimations for fixed lines, and mobile phones to disaggregate their effects in 63 developing countries between 1990 and 2001. They found that the elasticity of aggregate national output with respect to main telephone lines is smaller than that of mobiles and that, in developing countries, cellular services contribute significantly to national output.

Kumar (2011) assessed the behavior and determinants of financial inclusion in India. The study found that the factory proportion and employee base were considered as the significant variables indicating that income and employment generating schemes lead the public to be more active, aware, interested with regard to banking activities, which contributes towards financial inclusion.

Achieng (2011) studied the strategic responses of Kenya Commercial Bank to mobile money transfer in Kenya and found out that the money transfer service industry could be described as emerging, rapidly growing or a high velocity market in Kenya and any developing country. The study indicated that with the strategic positioning of the mobile telecommunications providers and the need for banking institutions to partner and integrate with the Mobile money transfer provides in order to remain relevant and share in the huge potential offered to mobile subscribers.
Singh and Kodan (2012) analyzed the relationship between financial inclusion and development to identify factors associated with financial inclusion. With the help of Regression he found that per capita NSDP and urbanization were significant explorers of financial inclusion while the literacy, employment and sex-ratio were not statistically significant explorers/predictors of the financial inclusion.

Waihenya (2012) conducted a study of the effect of agency banking on Financial Inclusion in Kenya. Secondary data was used for this study since it is easily accessible, cheaper and accurate for this case due to the regulations around submissions by Central Bank of Kenya.

Secondary data from existing theories and researchers done on mobile money transfer and financial inclusion from finance books, journals, periodicals and internet was also relied upon. The study concluded that agency banking has the effect of increased financial inclusion in the country significantly. The research found that the levels of financial inclusion are low and that there is notable gap not bridged by formal banking framework. It further notes that agency banking is facing a lot of challenges from the increasing mobile penetration in the country and mobile money transactions increasing at the same rate.

Nyasetia (2012) set out to establish the implications of financial deepening on savings and investments in Kenya. He adopted a causal research design in investigating the relationship between financial deepening and savings and investments in Kenya. He used secondary data on financial deepening indicators, savings and investments from 2006-2011. He conducted regression analysis to establish the relationship and found a strong
positive correlation between savings and investments. The study established that when there is proper financial deepening, the level of savings and investments in Kenya also improve. If interest rates are not favorable, if the stock market is not doing well, if deposits in banking institutions are not growing, then there will be slow growth and improvement in savings and investments.

Chithral and Selvam (2013) in their attempt to identify and analyze the determinants of financial inclusion carried out empirical analysis that revealed that socio-economic factors like Income, Literacy and Population were found to have significant association with the level of financial inclusion. Further, physical infrastructure for connectivity and information were also significantly associated with financial inclusion. Among the banking variables deposit and credit penetration were found significantly associated with financial inclusion. Finally, credit-deposit ratio and investment ratio were not significantly associated with financial inclusion.

A study by Ozurumba and Chigbu (2013) critically assessed determinants of financial deepening in Nigeria between 1970 and 2010. The study was necessitated by the central role which the banking system plays in the mobilization of savings and allocating money for investment activities needed for economic development. Among the variables observed against financial deepening are; bank investments, cost of bank credit, saving mobilization by commercial banks, clearing activities by the banks and private sector credit. The study used secondary data sourced from the Central Bank of Nigeria publications and those of the Bureau of Statistics for a period of 41 years. From the survey the study observe that the roles of deposit money banks in the development of Nigerian
financial system are imperative. The value of cheques cleared has a negative and significant relationship with financial deepening. Financial saving and prime lending rate have a negative and insignificant impact on financial deepening; deposit money banks assets and private sector credit are statistically significant and positively related to financial deepening. The study recommends establishment of banks branches and rural banking scheme in order to mobilize financial resources that are outside the system for productive investment. The regulatory authorities should also strengthen the legal and regulatory framework within which the commercial banks and financial systems operates.

A study by Mutsune in (2014) investigates financial inclusion through mobile banking in Kenya. The study examines Kenya’s highly successful money transfer model, Mpesa, in an effort to explore the nature and role of financial inclusiveness in stimulating economic activity. The study focused on exploring a framework that can be used to estimate how financial inclusion in Kenya through mobile banking has impacted economic dynamism. The ideas presented are an innovative exploration that blends economic thinking and with aspects of natural science with the aim of developing a framework that can be applied to appropriate data. The study recommends flexibility in this new form of technology application by policy makers. Due to increasing velocity of transactions in Kenya, and the increasing assumption of banking services by mobile service providers, the monetary authorities should go back to the drawing board to recalibrate rules on money supply and banking services respectively. The study suggests a close attention to policy concerns in future studies.
2.5 Summary of Literature Review

This chapter started by looking at the theoretical framework where it discussed the theories on which the study is found: financial intermediation theory Demand & supply side Twin Theory, and Productivity gains and reduction in transaction costs. According to financial intermediation theory, financial institutions exist to mediate between the surplus and deficit units in an economy by facilitating the transfer of resources. However, this needs to be done in an economic way so as to minimize the operating costs and maximize the revenues for these banks. Financial intermediation theory brings out the role played by mobile banking in the financial intermediation process by enabling the accessibility of banking services over the mobile phone. From the above discussion of the theoretical and empirical literature, limited research has been conducted on the relationship between mobile banking and financial inclusion in Kenya. It is expected that there should be a positive relationship between mobile banking and financial inclusion, however no known study has been conducted to establish the relationship between the two hence the research gap. The existing studies have been done in other economies which have different operating environment from that in Kenya. This study therefore seeks to fill this research gap.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This chapter provides the methodology of the study. It gives the specific procedures that will be followed through in undertaking the study. The research design, population, sampling frame, data collection methods & data analysis are also defined & described in this chapter.

3.2 Research Design
Research design refers to how data collection and analysis are structured in order to meet the research objectives through empirical evidence (Cooper and Schindler, 2006). The study adopted a descriptive research design. Mugenda and Mugenda (2003) describes descriptive research design as a systematic, empirical inquiring into which the researcher does not have a direct control of independent variable as their manifestation has already occurred or because the inherently cannot be manipulated. Descriptive research design is more appropriate because the study seeks to build a profile about the relationship between mobile banking and financial inclusion in Kenya. Gay (1981) defines descriptive research as a process of collecting data in order to test hypotheses or to answer questions concerning the current status of the subjects in the study.

3.3 Data Collection
Data collection is the most crucial part in gathering the required information with a view of achieving the research objectives stated. The researcher acknowledged the various options available as data collection methods or research instruments, each with its
advantages and disadvantages. In order to identify and determine the relationship between Mobile banking and financial inclusion in Kenya, this study used secondary data. The data on the number of mobile subscribers registered on mobile banking and number of mobile banking agents was collected from communication authority of Kenya, while data on number of banks with mobile banking services and the number of transactions done via mobile banking was collected from central bank of Kenya and Kenya national bureau of statistics respectively. Other publications with relevant data on financial access, financial deepening and mobile banking services were also used. This made it easier to obtain adequate and accurate information necessary for the research.

3.4 Data Analysis

After successful data collection exercise, the obtained data was verified and edited for completeness and consistency. A content analysis and descriptive analysis was employed. Tables and other geographical presentations as appropriate were used to present the data collected for ease of understanding and analysis.

Inferential statistics regression was applied to establish the relationship between Mobile banking and Financial Inclusion in Kenya. Financial inclusion was taken as dependent variable where as a various measures of Mobile Money Transfer such as number of subscriber with access to mobile phone, number of subscriber enrolled to mobile money services, and number of mobile money agency distribution. The regression model used in this study is;

\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \]

Where,
Y = financial inclusion as measured by the number of bank accounts in commercial banks in Kenya between 2006 and 2014.

$\alpha = \text{constant term}$

$X_1$ - Access to mobile phone-number of mobile users with access to mobile phone

$X_2$ - Enrollment to mobile money services-number of subscribers who have enrolled for the mobile money services.

$X_3$ - Number of mobile money agency distribution-number of mobile money agents who convert mobile money to real cash

$\beta_1, \beta_2, \beta_3 = \text{Beta coefficients indicating various levels of importance (weight of each factor)}$

Statistical tools will be used to analyze the data in order to provide for meaningful distribution of scores. For this purpose, Statistical package for social science (SPSS) and R-statistics will be used in analysis. The package will be able to execute such high level of analysis of variance (ANOVA), the chi-square tests, comparisons of several means and many other statistical operations will be applied.

3.4.1 Test of Significance

The model significance was tested using the analysis of the variance (ANOVA), t-tests, z-tests, F-tests and the chi-square at 95% confidence. Statistical inference techniques were used in making conclusions relating to the accuracy of the model. Coefficient of correlation and determination were used to show the strength of independent and dependent variables and the level of error in the model respectively.
CHAPTER FOUR
DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents analysis and findings of the research. The objective of this study was to establish the relationship between mobile banking and financial inclusion in major mobile banking services providers in Kenya 2009 -2014.

4.2 Descriptive Statistics

4.2.1 Trend in the four main variables

Table 4.1: Trend in Access to Mobile Phone, Subscribers Registered On M-Banking, Number of mobile money agency distribution and Number of bank accounts, within the Years 2006 And 2014

<table>
<thead>
<tr>
<th>variables</th>
<th>Minimum (persons)</th>
<th>Maximum (persons)</th>
<th>Mean (persons)</th>
<th>Std. Deviation (persons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Mobile Phone</td>
<td>3546000</td>
<td>33614852</td>
<td>18428976</td>
<td>866421</td>
</tr>
<tr>
<td>Subscribers Registered On M-Banking</td>
<td>31140</td>
<td>27846318</td>
<td>20684648</td>
<td>408326</td>
</tr>
<tr>
<td>Number of mobile money agent</td>
<td>36</td>
<td>124179</td>
<td>25469308</td>
<td>3240</td>
</tr>
<tr>
<td>Number of bank accounts</td>
<td>1906679</td>
<td>28400000</td>
<td>293119841</td>
<td>740367</td>
</tr>
</tbody>
</table>
The study sought to assess the trend in access to mobile phone within the years 2006 and 2014. From the findings, it can be noted that the year 2006 recorded the lowest value for number of mobile users with access to mobile phone as shown by 3546000 while the year 2014 recorded the highest value for number of mobile users with access to mobile phone as shown by 33,614,852. In addition, values for standard deviation depicts variability in number of mobile users with access to mobile phone during the nine – year period. The deviation for the whole period was found to be 866,421.

**4.2.2 Subscribers Registered On M-Banking**

The study sought to assess the number of Subscribers registered on m-banking within the years 2006 and 2014. From the findings, it was noted that the year 2006 recorded the lowest value for number of subscribers registered on m-banking as shown by 31,140 while the year 2014 recorded the highest value for subscribers registered on m-banking as shown by 26,980,526 in addition, values for standard deviation depicts variability in number of subscribers registered on m-banking during the nine – year period. The deviation for the whole period was found to be 408,326.

**4.2.3 Number of mobile money agency distribution**

The study sought to establish the number of mobile money agents within the years 2006 and 2014. From the findings, it was noted that the year 2006 recorded the lowest value in Number of mobile money agents as shown by 36 while the year 2014 recorded the highest rate in number of mobile money agents as shown by 124,179. In addition, values for standard deviation depicts variability in number of mobile money agents during the nine –year period with the overall deviation being 3240.
4.2.4 Number of bank accounts

The study sought to assess the trend in number of bank accounts within the years 2006 and 2014, from the findings, it can be noted that the year 2006 recorded the lowest value in number of bank accounts as shown by 1,906,679 while the year 2014 recorded the highest value in number of bank accounts 28,400,000. In addition, values for standard deviation depicts variability in number of bank accounts during the nine–year period with the overall deviation being 740,367.

4.3 Regression Analysis and Hypothesis Testing

4.3.1 Model Summary

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 21.0) to code, enter and compute the measurements of the multiple regressions. The model summary are presented in the table below

Table 4.2: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.983(^a)</td>
<td>.967</td>
<td>.917</td>
<td>1877235.50014</td>
</tr>
</tbody>
</table>

\(^a\) Predictors: (Constant), access to mobile phone, enrollment to mobile money services, number of mobile money agency distribution

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the above table the value of adjusted R squared was 0.917 an indication that there was variation of 91.7 percent on level of financial inclusion due to changes in access to
mobile phone, enrollment to mobile money services and number of mobile money agency
distribution at 95 percent confidence interval. this shows that 91.7 percent changes in
financial inclusion could be accounted to access to mobile phone, enrollment to mobile
money services and number of mobile money agency distribution. R is the correlation
coefficient which shows the relationship between the study variables, from the findings
shown in the table above is notable that there extists strong positive relationship between
the study variables as shown by 0.983

4.3.2 ANOVA

The study further tested the significance of the model by use of ANOVA technique. The
findings are tabulated in table below.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>220553180915497.530</td>
<td>26</td>
<td>70185393638499.180</td>
<td>19.495</td>
<td>.001</td>
</tr>
<tr>
<td>1 Residual</td>
<td>8100543029497.043</td>
<td>10</td>
<td>3600261514748.512</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>228653603944994.570</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Critical value =3.6

From the ANOVA statics, the study established the regression model had a significance
level of .001% which is an indication that the data was ideal for making a conclusion on
the population parameters as the value of significance (p-value) was less than 5%. The
calculated value was greater than the critical value (19.495>3.6) an indication that Access
to mobile phone Enrollment to mobile money services and Number of mobile money
agency distribution all have a significant effect on Financial inclusion. The significance
value was less than 0.05 indicating that the model was significant.
4.3.3 Coefficients of determination

In addition, the study used the coefficient table to determine the study model. The findings are presented in the table below.

Table 4.4: Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.176</td>
<td>.327</td>
<td>.538</td>
<td>.002</td>
</tr>
<tr>
<td>Access to mobile phone</td>
<td>.517</td>
<td>.096</td>
<td>5.375</td>
<td>.000</td>
</tr>
<tr>
<td>Enrollment to mobile money services</td>
<td>.397</td>
<td>.043</td>
<td>9.336</td>
<td>.003</td>
</tr>
<tr>
<td>Number of mobile money agency distribution</td>
<td>.269</td>
<td>.048</td>
<td>5.660</td>
<td>.001</td>
</tr>
</tbody>
</table>

From the above regression equation it was revealed that holding access to mobile phone, enrollment to mobile money services and number of mobile money agency distribution, the level of financial inclusion would be at 0.176, from the regression model obtained above, a unit change in access to mobile phone holding the other factors constant would lead to change in level of financial inclusion by 0.517, a unit change in enrollment to mobile money services holding the other factors constant would change in level of financial inclusion by 0.397 while a unit change in number of mobile money agency distribution holding the other factors constant would change the in level of financial inclusion by 0.269.

This implied that access to mobile phone had the highest influence on the level of financial inclusion followed by number of mobile money agency distribution and finally Enrollment to mobile money services. It was an implication that access to mobile phone,
enrollment to mobile money services and number of mobile money agency distribution played a positive role in financial inclusion process.

The analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and $\alpha=0.05$. If the probability value was less than $\alpha$, then the predictor variable was significant otherwise it wasn’t. All the predictor variables were significant in the model as their probability values were less than $\alpha=0.05$.

### 4.4 Correlation Analysis

<table>
<thead>
<tr>
<th>Table 4.5 Pearson’s correlations coefficients matrix for the model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>No of subscribers</td>
</tr>
<tr>
<td>Agents</td>
</tr>
<tr>
<td>Registered</td>
</tr>
<tr>
<td>Registered</td>
</tr>
</tbody>
</table>

When the pearson correlation is closer to 1, there is a strong relationship between the variables in that a change in one variable strongly correlates with in the second variable. In our study, the relationship between agents, and number of subscribers has a pearson’s $r$ of 0.958 which is very close to 1; we can thus conclude that there is a strong relationship
between agents and number of subscribers. When we examine the relationship between number of subscriber and subscribers of mobile money, the pearson’s r is 0.981 which we can conclude it’s a strong relationship. This strong relationship applies to number of subscribers against the value of mobile transactions which is 0.971, agents against subscribers of mobile money which is 0.976, agents and value of mobile money transactions which has a pearson’s r of 0.992. The sig(2) tailed value for all is less than 0.05 which means there is a statistically significant correlation between our variables.

4.5 Discussion of the Findings

The study findings revealed that the year 2006 recorded the lowest value for number of mobile users with access to mobile phone as shown by 3,546,000, while the year 2014 recorded the highest value for number of mobile users with access to mobile phone as shown by 32,655,865. The study also established a positive coefficient of variation between access to mobile phone and financial inclusion as shown by (Beta value = 0.517) the study also established that financial literacy acts as an enabling factor that unlocks other key dimensions of financial inclusion, the study further revealed that reliable communication infrastructure acts as a key pillar in financial inclusion process. The findings concurs with Chithral and Selvam (2013) who found that access to communication media have significant association with the level of financial inclusion.

Regarding the trend on subscribers registered on M-Banking in the years 2006 and 2014, the research noted that the year 2006 recorded the lowest value for number of subscribers registered on m-banking as shown by 31,140, while the year 2014 recorded the highest value for subscribers registered on m-banking as shown by 26,980,526. The study also
established a positive coefficient of variation between enrollment to mobile money services and financial inclusion through mobile (Beta value = 0.397). The study also established that financial inclusion assisted people with money management improving their ability to track their financial status and make good financial decisions and that assisting people to keep track more effectively or make better money management decisions. The findings are in line with the finding by Gaurav, (2007) that provision of financial advice through mobile banking enabled equipped customers with the ability to make informed judgments, which enabled them take effective actions regarding the current and future use and management of money.

On the number of mobile money agents, the study established that the year 2006 recorded the lowest value in number of mobile money agents with a total of 36. while the year 2014 recorded the highest rate in number of mobile money agents with a total of 121,215. The study established a positive coefficient of variation between mobile money agency distribution and financial inclusion as shown by Beta value of 0.269. The study further revealed that technology enhanced delivery channels represent a major, exciting opportunity in financial inclusion. The findings are in line with the finding by Sarma and Pias, (2004) who established that agency distribution contribute significantly to rate of mobile banking adoption rate by locals. The study noted that the year 2006 recorded the lowest value in number of bank accounts as shown by a mean of 1,906,679. while the year 2014 recorded the highest value in number of bank accounts as shown by a mean of 26,025,000.
5.1 Introduction

This chapter discusses the summary of the findings; conclusions reached and give the recommendation as per the responses received from banks, mobile operators and mobile users. The study attempted to establish the relationship between mobile banking and financial inclusion in Kenya.

5.2 Summary of Findings

The study aimed to establish the relationship between mobile banking and financial inclusion in Kenya. The study revealed that there is a positive impact between banks and mobile banking and thus synergies exists, mobile phone money transfers helps largely by increasing interface between commercial banks and the cash remittance services of mobile telephone service firms. According to banks, customer turn out level was high as a result of mobile banking resulting to a positive impact on performance. The mobile operators reported generating high revenues from mobile money transfers which was fuelled by a high number of consumers moving money in their bank account using their mobile phones. It was found that mobile banking services and financial inclusion have a very strong relationship positively. Further this relationship is greatly enhanced by a strong positive mobile subscriber penetration rate as well as the strong growth on subscribers registering for mobile money services and increased agent network that facilitates the end to end mobile transfer transactions.
The mobile money platform offered by mostly mobile services providers has been identified as the main contributor of this phenomenon innovation that has focused on the convenience, reliability, flexibility and structure of the service offering to a very strongly accepted and integrated service within the subscribers. The government being very keen on increasing financial inclusion in its development agenda has continued to be involved in this mobile transfer market as a regulator and offers a framework of operation from a risk and operational point hence making these services well embedded in both formal and informal economic activates. Initially the financial sector players mainly the commercial banks and other micro credit organizations had begun to fight against the services by offering competitive products but this was short lived.

5.3 Conclusion

From the finding above, it can be concluded that before introduction of mobile Banking services in Kenya, there was a significant gap and challenge in accessing financial services due to limited number of bank accounts in the country. With the introduction of mobile money banking services facilitated by the increasing number of subscribers and penetration rate, this has been the key milestone in the strengthening of the service and acceptability by the financially excluded population mainly in the marginalized set ups. It can further be seen that fundamental contributors towards this phenomenal growth of mobile banking service has been the number of subscribers with access to the phone and subsequent enroll for this service. Further the agency network has been a key contributor to the enhancing smooth service delivery to the users and creating more opportunities for use within the population hence growth in the number of transactions and the volume of these transactions as well.
It is noted that the other factors that may have contributed to the growth of mobile banking services in the country is the convenience, Reliability and flexibility of the service towards vast acceptable points and structure of accessibility with no complexity of registration as it is with banks and other financial service providers. This has facilitated acceptability and use of the services amongst various users across ages, gender, educational levels, and income levels which predominantly defines usage patterns in Kenya.

5.4 Recommendation for Policy

With the inevitable cross boundaries between banks and mobile operator, further enhanced and supported policies that encourage financial sector deepening should be implemented. These should be complemented with measures to promote the growth and image of banks and mobile operators in a bid to promote the synergy existing between them. Pertaining losses due to fraudulent access of customers’ accounts from hacking, there is a need to employ disciplined, qualified and well remunerated ICT staff in the bank and at the level of mobile operator.

All incidences of bank officials colluding with fraudsters to fleece customers ‘should be eliminated with advent of ICT. For cash transactions, one way to enable lower fees should be by creating category of street-level sub-agents, characterized by lower costs and commissions than store-based agents. Sub-agents would use normal retail outlets to rebalance their cash and stored value. The key principle here is that segmentation of customers’ needs to go hand-in-hand with segmentation of agents. On the regulatory challenges, there is need to include interfaces between different tiers of service providers
(Banks and mobile operators), which in order to keep the public’s confidence in the system, the findings recommends certain level of clarity on who is who in terms of service delivery.

There is a need by regulators to revise the current loose regulatory framework to formulate clear regulations to current and prospective mobile operators, for example on transaction volumes, business use of services, and security. Lack of clarity and uncertainty is not good for any business and nor for the confidence in the financial systems. By setting the rules clearly, the playing field is more predictable and this will promote further investments and competition.

5.5 Limitation of the study

Mobile money transfer services is still at its infancy stages hence sufficient data and literature focusing on Kenya and local studies is therefore limited. Citing prior research from the basis of literature review has helped to lay foundation for understanding the study though there was any earlier local scholar of the study topic, hence reporting data is limited and rarely be independently verified. Since this is a highly commercialized environment with the key players being highly competitive using this survey as a competitive and retention edge, there was a restriction in obtaining data until the researcher had to prove and commit it was purely for academic purposes only.

Whilst the study would have given more insightful revelation based on the granularity of the study on the other variables, time and financial resources were a constraint in understanding the study. The other challenge is the use of only secondary data. This data has been presented by the banks with mobile banking services to the CBK hence can not
be validated. Primary data could have also been used as first hand information is obtained from the users of the services and the impact it creates in their lives. In addition, the study relied on information provided by mobile banking services to the regulators. Hence the information could be distorted to avoid certain things or make certain impressions. The researcher had no way of adjusting the secondary data for any inconsistencies or temporary variations.

5.6 Suggestion for Further Research

There is need for further research to be undertaken for similar study but for a longer duration of time to evaluate the long term relationship. Further, a research gap was identified in the bank-integrated mobile savings model which needs to be filled by conducting a research to establish an attractive package that can provide for consumers beyond what basic mobile savings systems already offer. Also, another area of future study would be in line to examining the extent which MFSPs pull away business/ services that would ordinarily be transacted in a formal financial service provider and the benefits, challenges, risks etc. that would accrue if the limits are not clearly defined.
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