

**FACTORS CONTRIBUTING TO THE USE OF MOBILE FINANCIAL
SERVICES BY BUSINESS OPERATORS IN KAKAMEGA TOWN,
KENYA**

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C50/64906/2013

**A PROJECT PAPER SUBMITTED IN PARTIAL FULFILLMENT FOR
THE DEGREE OF MASTER OF ARTS IN SOCIOLOGY (RURAL
SOCIOLOGY AND COMMUNITY DEVELOPMENT) OF THE
UNIVERSITY OF NAIROBI**

NOVEMBER, 2014

DECLARATION

This research project is my original work and has not been presented for a degree in any other University.

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SUPERVISOR'S APPROVAL

This research project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

This work is dedicated to my parents Mr. and Mrs. Karoki.

ACKNOWLEDGEMENTS

I thank the almighty God for his eternal love and favor during this study. I owe a lot of gratitude to my family, am still in awe at all your support. Professor Preston Chitere am humbled at your wealth of knowledge, thank you for your support. I thank my organization for according me time off to make this research project possible. To Mr. Samuel Kamau, a thank you would never be enough. Am grateful, you're one in a million. Miss, Serah Ndegwa, thank you for your words of encouragement. You were a resourceful research assistant. I thank the business community in Kakamega town; you made this research project a success. To the department of Sociology and Social work, University of Nairobi, thank you for offering me a platform to research on this topic.

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LIST OF ABBREVIATIONS

AFI	-	Alliance for Financial Inclusion
AMPI	-	African Mobile Phone Financial Services Policy Initiative
ATM	-	Automated Teller Machine
CBA	-	Commercial Bank of Africa
CGAP	-	Consultative Group to Assist the Poor
DIT	-	Diffusion of Innovations Theory
GDP	-	Gross Domestic Product
ID	-	Identification card
IS	-	Information System
IT	-	Information Technology
ITU	-	International Telecommunication Union
KCB	-	Kenya Commercial Bank
KRA	-	Kenya Revenue Authority
MFS	-	Mobile Financial Service
MNO	-	Mobile Network Operator
MSME-	-	Ministry of Micro Small and Medium Enterprises
PDA	-	Personal Digital Assistant
RBA	-	Retirement Benefit Authority
SLT	-	Social Learning Theory
SMS	-	Short Message Service

ABSTRACT

Financial services in the past have been difficult to access and were usually customer friendly to the wealthy in society. Accessibility to the services by the poor in the society was expensive since most of them were located in big towns. In the last few years however, technology revolutionized the manner of how people are handling financial matters. The convergence of telecommunication and banking services has created opportunities for the emergence of mobile financial services, in particular mobile banking. This has made banking reach rural areas to the poor in the society who can improve their social life through the operation of MFS businesses in their locations. Although the use of mobile financial services on society is vast and can be examined through a variety of disciplines, study on the factors contributing to mobile financial services use amongst business operators is important.

The general objective of the study was to find out the factors contributing to mobile financial services use by business operators in Kakamega town. Specific objectives were to: analyze how characteristics of users contribute to the use of mobile financial services by business operators in Kakamega town; find out how the level of awareness contributes to the use of mobile financial services by business operators in Kakamega town; analyze how level of use contribute to the performance of mobile financial services by business operators in Kakamega town; and find out how user perceptions contribute to the use of mobile financial services by business operators in Kakamega town.

This study was conducted through cross sectional research design. The study sampled 5 blocks in Kakamega town namely Mega Mall Street, Ambwere Street, Ankoi Street, Canon Road and Khasakhala Road. Systematic sampling technique was used to sample MFS operators from each block. The study also sampled 8 key informants from the MFS providers. Both quantitative and qualitative data were collected in this study. Quantitative data were collected from the questionnaires while qualitative data were collected from Semi structured interview guide.

The study found that the benefits of MFS vary depending on user characteristics and the level of mobile penetration into the region. MFS have increased economic growth in Kakamega since it has fueled entrepreneurship and new business creation. Taxes paid by MFS businesses are as result used by the Government to create and improve social amenities in Kakamega town. The study found that MFS operator's families are able to respond to shocks and because of the effects MFS have on education, health and entrepreneurship, MFS operators have the opportunity to lead improved lives. The study found that the level of awareness is an important factor in encouraging consumers to use mobile financial services. The study found that mobile users in Kakamega town had a positive perception towards mobile financial services. The level of perception is important in any product that penetrates into the market.

The study recommended that the management of MFS providers re-evaluate their mobile financial services and embark on a fact finding mission to find out from their operators the services which they would like to have access to via mobiles, so that whatever solutions they come up with will be more enticing to users and encourage them to sign up.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Financial services in the past have been difficult to access and were usually customer friendly to the wealthy in society because accessibility to them was expensive with most previously being located in big towns and also, requirements to access them being unattainable to common man due to cost, for example, the insurance and banking sectors. Insurance was not well marketed in the rural areas and the packages favored the wealthy with high premiums while pension was accessible to white collar jobs employees. This in turn lead to high poverty rates in most rural areas in Kenya due to lack of quality health care, lack of good pension scheme in their golden ages and loans to develop their lives.

In the last few years however, technology revolutionized the manner of how people are handling financial matters. The convergence of telecommunication and banking services has created opportunities for the emergence of mobile financial services, in particular mobile banking. Mobile banking is an innovation that has progressively rendered itself in pervasive ways cutting across several financial institutions and other sectors of the economy (Vaidya, 2011). During the 21st century mobile banking advanced from providing mere text messaging services to that of pseudo internet banking where customers could not only view their balances and set up multiple types of alerts but also transact activities such as fund transfers, redeem loyalty coupons, deposit cheques via the mobile phone and instruct payroll based transactions (Vaidya, 2011). The world has also become increasingly addicted to doing business in the cyber space, across the internet and World Wide Web.

Mobile banking (m-banking) provides an element of banking and financial services through the help of mobile telecommunication devices (Lavine, 1997). Mobile financial services provide time independence, convenience and promptness to customers, along with cost savings. Mobile financial services present an opportunity for banks to expand market penetration through mobile services (Lee, Lee and Kim, 2007). The scope of offered services may include facilities to conduct bank and stock market transactions, administer accounts and to access customized information. According to Zelizer (1994), there is a litany of factors influencing mobile financial services use. Both macro-level cultural factors and micro-level, locally-negotiated norms in

families and among peers use mobile financial services where banks or insurance firms are few. Abraham (2007) shows that up-to-the minute knowledge of market prices raises the prices that fishermen in India can command for their fish through mobile phones. This has reduced the time spent by fishermen to the financial institutions and instead uses it socializing and fishing more fish for increased returns.

According to the International Telecommunication Union (ITU) report, there is significant growth in the use of mobile phones, with over 90% of the population in South Africa using them (ITU, 2009). Mobile phones have become a tool for everyday use, which creates an opportunity for the evolution of mobile financial services to reach the previously unbanked population through mobile banking. The use of mobile banking can make basic financial services more accessible to low-income people, minimizing time and distance to the nearest retail bank branches (CGAP, 2006). Blauw (2011) indicates that in Uganda, the strongest determinant in mobile phones improving individuals' economic outcomes is simply access to mobile technology. He attributes this effect to the benefits from interaction with the medium that provided them with pertinent information, mobile financial services and more as they become more familiar with product operability.

Although the use of mobile financial services on society is vast and can be examined through a variety of disciplines, measuring the use of mobile financial services is important (Aker and Mbiti, 2010). Mobile networks in Kenya offer mobile financial services in the name of M-pesa by Safaricom, Orange money by Orange and Airtel money by Airtel. Currently the mobile money market size is about 15 million users transferring Kshs. 2 billion daily, of these over 14 million are M-pesa customers. M-money providers have partnered with commercial banks such as Equity Bank, I&M Bank, Kenya Commercial Bank, Barclays and Co-operative Bank to offer mobile based financial products that aim to reach the unbanked.

Mobile financial services provided in Kenya include both mobile banking (m-banking) and mobile payments (m-payments). Mobile banking involves the use of mobile phones to access banking services and executes financial transactions. M-Co-op cash from the Co-operative bank and K.C.B Jibenkie from KCB bank are mobile financial services offered by banks in Kenya. This covers both transactional and non-transactional services such as viewing financial information on a bank customer's mobile phone and mobile payments which are non-bank led

and the mobile company is the primary driver of the product or service. Other mobile financial services in Kenya include; Linda Jamii, M-shwari, Mbao pension plan in Kenya. Mobile financial services are offered on the platform of mobile network operator which are companies licensed by the government to provide telecommunication services through mobile devices.

Kenya is on the cutting edge of mobile financial services with the early success and nationwide prevalence of M-pesa. M-pesa is the product name of a mobile phone-based money transfer service for Safaricom, which is a Vodafone affiliate. Within four months of its operation, over 250,000 clients, set as a target for year one, became customers (Hughes and Lonie, 2007). About 1 million registered with M-pesa by the end of the first year. By August 2009, about 2.5 years after startup, over 7.7 million Kenyans (about 38 percent of the adult population) had become registered users of M-pesa, far exceeding the projections. As of January 2010, that number rose to over 9 million. By December 2009, the monthly value of person-to-person transfers was over Ksh 26 billion (approximately U.S. \$330 million). There was also a phenomenal growth in the number of agents, from 7,000 in March 2009 to almost 17,000 by January 2012. These agents are located throughout urban and medium-to-large market centers.

Many poor people in rural areas already have access to mobile phones. A positive aspect of mobile phones is that mobile networks can reach remote areas at low cost. The poor often have greater familiarity and trust with mobile phone companies than formal banking institutions. Furthermore a mobile handset can easily be adapted to handle banking transactions (Aker and Mbiti, 2010). Due to this, financial services are provided in ensuring that social and economic stability has been promoted. Loans can be accessed through these mobile financial services to finance their businesses hence improve their social and economic life.

1.2 Statement of the Problem

Mobile devices have infiltrated and revolutionized the modern world. Although the use of mobile financial services on society are vast and can be examined through a variety of disciplines, this study focused on the contribution of mobile financial services use amongst business operators in Kakamega Town. Lum (2011) conducted a study in India about the effect of cell phones on economic growth and development but focused on various ways cell phones can make markets more efficient and how the diffusion of information and knowledge plays into development.

Another study of the impact of cell phones in Uganda suggests that the mere expansion of mobile phone coverage, as opposed to the possession of mobile phones at the household level, allows an increase in information flow, inducing the market participation of farmers who produce perishable crops like bananas in areas far away from a district center (Muto and Yamano, 2009). This study did not determine the level of use of mobile phones in Ugandan rural areas. A study by Aker and Mbiti (2010) details the channels through which the MFS and use of mobile phones in sub-Saharan Africa has affected economic growth and development. For instance, in Ghana, cell phones are used to keep in touch with relatives, as well as learn about corn and tomato prices (Aker and Mbiti, 2010). This study sought to determine the level of use, people's level of awareness of mobile financial services that was left out in their studies. This study sought to analyze the factors contributing to mobile financial services use amongst business operators in Kakamega town, Kenya.

1.3 Research Questions

- a) How do characteristics of users contribute to the use of mobile financial services by business operators in Kakamega town?
- b) How does the level of awareness contribute to the use of mobile financial services by business operators in Kakamega town?
- c) How does the level of use contribute to the performance of mobile financial services by business operators in Kakamega town?
- d) How do user perceptions of contribute to the use of mobile financial services by business operators in Kakamega town?

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of the study was to find out the factors contributing to mobile financial services use by business operators in Kakamega town, Kenya.

1.4.2 Specific Objectives

- a) To analyze how characteristics of users contribute to the use of mobile financial services in Kakamega town.
- b) To find out how the level of awareness contribute to the use of mobile financial services in Kakamega town.
- c) To analyze how level of use contribute to the performance of mobile financial services in Kakamega town.
- d) To find out how user perceptions contribute to the performance of mobile financial services in Kakamega town.

1.5 Justification of the Study

This study was set out to explore the determinants of use or lack of use of the MFS with specific reference to Kakamega town. This information in turn can assist policy makers to come up with consumer friendly policies that can assist in adoption and use of MFS product or service providers understand their clientele' from needs to challenges in accessing their services hence economic growth. This can see the informal sector employees get pension hence securing their future and the common man get access to quality medical care through medical insurance and loans to develop their livelihoods through affordable and accessible loans.

1.6 Significance of the Study

Mobile phones can impact the economy in a number of ways. They have the potential to reduce the costs of communication by lowering search costs and making information more accessible to the general population in rural areas. This, in turn, can lead to more efficient market operation by reducing the amount of waste caused by spoilage and by facilitating communication between producers, sellers and buyers. In addition, mobile phones can increase the economic welfare of

both consumers and producers. Finally, mobile phones use can stimulate the economy by creating more demand for mobile-based services, which in turn increases employment.

Mobile phones also offer the potential for mobile phone-based services and products like mobile banking. Users are able to transfer money between bank accounts and pay bills via phone (Aker and Mbiti, 2010). In addition, mobile phones have been used to monitor elections and provide voter education. Mobile phones, with their text messaging capabilities, may increase literacy as well.

1.7 Scope and Limitation of the Study

This study was conducted among the business operators of mobile financial services in Kakamega town. It looked at the factors contributing to mobile financial services use amongst business operators in Kakamega town, Kenya. The study limited itself to four contributions only which were characteristics of users, level of awareness, and level of use and user perceptions. This being an exploratory study, there was scarce literature on M.F.S especially on the Linda Jamii and Mbao pension plan. The study did not look at all mobile financial services but was limited to M-Shwari, Mbao pension and Linda Jamii.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter reviews literature about mobile financial service use. It discusses mobile financial services social and economic benefits, mobile financial service policy and regulatory framework, factors influencing mobile financial service use, theoretical and conceptual frameworks of the study.

2.2 Mobile Financial Service Social and Economic Benefits

Mobile Financial Service (MFS) covers a broad range of financial activities that users may encounter when using their mobile phones and can be divided into two distinct categories: mobile banking (m-banking) and mobile payments (m-payments) (Boyd and Jacob, 2007). Barnes and Corbitt (2003), looks at mobile banking as a channel whereby the customer interacts with a bank via a mobile device, such as a mobile phone or personal digital assistant (PDA) and mobile payments as the use of a mobile device to conduct a payment transaction in which money or funds are transferred from a payer to a receiver via an intermediary, or directly without an intermediary.

Globally, the benefits of mobile financial services are influenced by factors of economic, technological, social, cultural, risk and security device features and service characteristics regardless the region. Banking infrastructure is indicated as a key factor influencing the potential for m-payments in any market because they found out m-payments have more opportunities in markets with relatively less developed the banking network. M-payment acts as a competitive service channel (Boyd and Jacob, 2007).

In Vietnam, cell phones are used to look for new business opportunities. They are used for a mobile banking system, and many users find the service convenient because they can keep a record of the transactions (Foster, 2007). In Sierra Leone, though rural areas still lack coverage, mobile phones have replaced the landlines destroyed during civil war (Sesay, 2004). They are now used to coordinate business transactions as well as communicate with relatives.

The main challenges that can be addressed by financial services are high income volatility and severe expense shocks (Kumar and Thomas, 2006). Obtaining financial services can smooth out cash flow by building a buffer through savings, increase inflows through remittances and accumulate lump sums of money for major expenses through credit and savings products. According to Boyd and Jacob (2007), financial inclusion will defend against severe expense shocks by helping to provide funds when an unexpected negative event occurs. Temporary shortfalls can be addressed through credit, remittances, and insurance products.

Donner and Tellez (2008) did a survey in Ukraine and targeted financial institutions. The main objective was to find out how MFS had improved the economy and social life of users. The survey concluded that mobile financial services' basic qualities help the unbanked overcome barriers and reap the benefits of financial services. They found that MFS are used by nearly everyone at any time of day or night and from anywhere, eliminating the accessibility issues presented by traditional banking.

Foster (2007) conducted a study in India about the unique advantages of telecommunication companies over traditional banks. The study found that telecommunication companies have traditionally focused on all customers, not just the most profitable among them. They already have a secure device (the mobile phone) in customers' hands. Unlike banks, telecommunications have existing relationships with these customers who establish trust and in turn the additional benefits of a large distribution network.

In a survey by Sesay (2004) in Norway aimed at identifying social and economic benefits MFS have on users. The findings identified economic benefits that MFS bring to users which included an increase in domestic capital formation, the drawing of credit into the banking system and the time and cost savings MFS would bring to individuals and companies. Those impacts serve to form the larger economic effects, including growth in Gross Domestic Product (GDP), entrepreneurship, and jobs. Sesay (2004) also found social benefits MFS brings to users which include the supplementing of incomes through remittances, providing a safe means to store income during good times and access to insurance. These impacts lead to larger social benefits, such as a reduction in financial exclusion, an increase in the poor population's resilience to shocks and the improved ability to keep children in school should a financial shock occur.

Entrepreneurs in developing countries in Africa purchase multiple mobile phones, purchase airtime in bulk and then sell airtime to people passing through a village center (Hesse, 2007). Still others establish kiosks to transmit money without mobile banking. In Uganda, customers buy mobile minutes on prepaid cards to transfer to a distant recipient. Kiosk owners send airtime to another kiosk owner by reading the activation code aloud over the mobile phone. The other kiosk owner will then convert the airtime into money after subtracting a commission, and deliver the funds to the distant recipient. In this manner, mobile phones enable those without bank accounts to receive money, and also stimulate other types of business activity.

Waverman, Meschi and Fuss (2005) note that “mobile phones substitute for fixed lines in poor countries,” and that “mobile telephony has a positive and significant impact on economic growth.” The researchers found that a ten percent increase in the mobile penetration levels of developing countries increased the growth rate by 0.6 percent. A ten percent increase in the telecommunications penetration rate (both mobile and fixed-line telecommunications) was associated with a 1.5 percent increase in the growth rate. The adoption and use of mobile phones in MFS enabled the spread of information without the costly installation of physical phone lines (Waverman, Meschi and Fuss, 2005).

Another study of the impact of cell phones in rural areas of Uganda suggests that the mere expansion of mobile phone coverage, as opposed to the possession of mobile phones at the household level, allows an increase in information flow, effective money transfer through phones and banking by farmers, inducing the market participation of farmers who produce perishable crops like bananas in areas far away from a district center (Muto and Yamano, 2009). Determinants of mobile phone network coverage and household possession of mobile phones enabled people in rural areas of Uganda transact with the bank more often.

In addition, a study by Aker and Mbiti (2010) details the channels through which the adoption and use of mobile phones in sub-Saharan Africa has affected economic growth and development. For instance, in Ghana, cell phones are used to keep in touch with relatives, as well as learn about corn and tomato prices (Aker and Mbiti, 2010). In Niger, cell phones are used to learn about job opportunities. Cell phones and text messages also remind users to take prescribed medications on time, and even report violent conflicts.

Omondi and Hussein (2009) looked at the financial inclusion of MFS in Kenya. The study targeted all the MFS providers and found that financial inclusion can increase a nation's GDP, access to credit facilitates, entrepreneurship and new business creation. The formalization of remittances and domestic payments adds an "accounting benefit" to the economy and the increased savings within the banking system facilitates the expansion of credit. Overall, mobile financial services reduce financial exclusion and increase GDP. This increase in GDP also creates additional jobs and businesses and stimulates additional tax revenues for governments.

From a social perspective, Omondi and Hussein (2009) found that financial inclusion promotes inclusive growth, which is especially meaningful for the country. Economic inequality could be reduced with MFS, relative to the baseline. The benefits of MFS accrue to the poorest of the population by supporting entrepreneurs with savings and credit, reducing leakages and costs imposed by middlemen and facilitating domestic and international remittances and transfers.

According to Ominde (2010), financial shocks put a severe financial burden on families that can be hard to overcome. Such shocks can come from natural disasters, unexpected medical emergencies or loss of income due to injury or even bad luck. MFS help the poor prepare for and respond to shocks, including natural disasters.

2.3 Types of Mobile Financial Services

Mobile phone technologies facilitate the development of many mobile services that may enhance market efficiency. One way in which mobile devices enhance development is through mobile banking, which, in turn, creates business and entrepreneurship opportunities (Aker and Mbiti, 2010). Ivatury and Pickens (2006) discuss the impact of mobile banking in South Africa, finding that m-banking increases the availability of money, credit, and other financial services to poor people. Because banking can be done electronically, people no longer need to devote time and money to traveling to distant bank branches. Mobile banking trims transaction fees that ATMs typically charge. With mobile banking, individuals can make payments, transfer money, and buy prepaid electricity and mobile airtime. They can also make balance inquiries and deposit and withdraw cash. So far, the mobile banking provider WIZZIT has launched m-banking in South Africa (Ivatury and Pickens, 2006), and Safaricom has implemented M-pesa in Kenya (Jack and Suri, 2009).

In line with the vision 2030 agenda on financial inclusion, CBA and Safaricom launched M-Shwari to revolutionize the agenda. Safaricom and CBA believe that this product takes their core mandate of transforming lives to the next level by providing financial access to all Kenyans especially those at the rural areas. It is the natural progression from M-Pesa to offer more products than just payment service (International Finance Corporation, 2011). M-Shwari is a paperless banking service for M-pesa subscribers provided by Commercial Bank of Africa (CBA) in conjunction with Safaricom that will have savings with interest and instant loans. For savings, M-Shwari allows customers save as little as ksh1 and earn interest (between 2-5%) on their saving balance, move money into the savings account using the customer's phone via the M-pesa menu with no minimum balance. M-Shwari also allows customers access to a microcredit product (loan) at a minimum of Ksh100 anytime and receive their loan instantly on their M-pesa account, determine loan amount by one's savings, loan repayment behavior and usage on Safaricom services, check loan qualification by calling a number, 30-day duration and 7.5% transaction fee and defaulters – lose their phone number (International Finance Corporation, 2011).

The Mbao Pension Plan is a voluntary individual account savings plan to which all workers in Kenya may contribute without regard to income or age. It is called 'Mbao' to refer to the Kshs.20/= which is the minimum daily contribution that members make. It is designed to provide a programme that is suitable for the unique nature of the informal sector and to encourage a savings culture for those workers (Kwena and Turner, 2013). Mbao pension plan is registered by both the Kenya Revenue Authority (KRA) and the Retirement Benefits Authority (RBA) by the official name Blue MSMEs Jua Kali Individual Retirement Benefit Scheme. This registration allows the scheme to run retirement plans for individual members. Members join and pay Ksh.100/= per week. The payments can be made by M-PESA and AIRTEL MONEY. Other modes of payments will be introduced with time. The funds so raised will be managed and invested on behalf of members by service providers appointed by Mbao Trustees and approved by RBA. The key innovation is that low-income workers can easily make small contributions at relatively low cost, considering the small contributions and small account balances. Participants can conveniently make contributions anytime and anywhere using their cell phones. This savings innovation is made possible by technological innovations that have reduced the costs of cell

phones and airtime, and by the entrepreneurial innovation of mobile money (Kwena and Turner, 2013). The plan is provided through private-sector businesses.

Linda Jamii is a revolutionary m-health product that has been developed by Britam in conjunction with Changamka Micro-insurance and Safaricom. It is an inpatient and outpatient medical scheme with funeral expenses benefits built into it. Linda Jamii is an affordable health care plan to manage unforeseen illness or injury without stress. This policy can be taken as an individual or as a family insurance. One can include as many own children as they are in the family. The applicant and the spouse should be between 18 and 75 years at entry. The policy is renewable annually but has no expiry. You can subscribe to Linda Jamii today by dialing *525#, then visit any Linda Jamii agent to complete your registration. All payments for Linda Jamii are paid by M-pesa using the paybill number 525252, there are no cash transactions. Gathara (2013) states that a member will be required to produce their Linda Jamii e-card or unique ID number and a national identification card. Members are required to seek out-patient treatment in accredited medical facilities (Gathara, 2013). The out-patient cover includes amongst others: consultation, laboratory services, drugs administration and dispensing and inpatient covers consultation, laboratory services, drugs administration and dispensing and bed. Dental treatment include; dental consultation, cost of filling, x-rays and extractions including surgical extractions together with anesthetics fees hospital and operating theatre cost while optical treatment include cost of eye testing, cost of eye glasses, and frame (Gathara, 2013).

2.4 Mobile Financial Service Policy and Regulatory Framework

The African Mobile Phone Financial Services Policy Initiative (AMPI) was created to be the firm platform for Alliance for Financial Inclusion (AFI) member institutions in Africa to provide high-level leadership in the overall development of mobile financial services (MFS) policy and regulatory frameworks, and to coordinate efforts of regional peer learning. This in turn broadens knowledge and promotes MFS policy development throughout the entire AFI Network (Brix and Katharine, 2009).

In Kenya, mobile banking regulatory framework broadens access to financial services and promotes wider formal financial inclusion. The regulatory responsibility in Kenya is divided amongst many bodies; this has engendered calls for rationalization and centralization as in many

jurisdictions. At the statutory level, Kenya has adopted electronic transactions legislation. However, this is not considered sufficient for the needs of all commercial operators, including the needs of mobile payments providers (Lyman, Gautam and Stefan, 2006).

In 2011, Kenya adopted the National Payment System Bill, which mostly contains regulatory content, but explicitly allows the use of electronic means when providing payment services. The liability of the mobile network operator is limited in several ways, including, for losses arising from “particular circumstances,” even if known to the operator. The mobile network operator is also not liable for technical malfunctions resulting “from circumstances beyond reasonable control.” Consequently useful elements for the assessment may be found in the contractual provisions of two major mobile network operators offering payment services. Since the consumer protection regime for payment systems in Kenya is fragmented, similar transactions attract different levels of protection (Brix and Katharine, 2009). Additionally, similar disputes are subject to resolution by different schemes. This study argues that there should be an effort to rationalize the existing structure and include the use of mobile financial services in Policy and Regulatory Framework so as support the use of MFS (Bangens and Bjorn, 2008).

2.5 Factors Influencing Mobile Financial Services Use.

2.5.1 Characteristics of Mobile Financial Services

The account balance service is one of the most promising mobile financial services, and is designed to help customers check their account balance and latest transactions immediately anytime and anywhere (Laukkanen, 2007). Luakkanen and Lauronen (2005) explain that location free access creates convenience in requesting account balances. Furthermore, accessibility and portability are classified as dimensions of convenience in the consumer behaviour literatures (Gehrt and Yale, 1993). Consequently the spatial and temporal distance between need recognition and need satisfaction can be considered important for doing financial transactions via mobile phone.

The ability to allow consumers to have more control over their financial situation is one attraction of mobile financial services (Laukkanen and Lauronen, 2005), as consumers prefer to act for themselves when dealing with their own monetary transactions through the mobile device. Luakkanen (2007) contends that the flexibility of being able to use the service wherever and

whenever the users want enables immediate completion of banking tasks (transferring money or paying a bill). This saves time and is perceived as convenient and efficient. The bank provides several services through mobile media, information based, transaction based and personal services (Laudon, & Laudon, 2002). The SMS service is the easiest way to check account balances and latest transactions via mobile phone (Laukkanen, 2007). Speed of data transmission and the user interface impairs the added value of mobile services. Therefore, the characteristics of the service as perceived by the user and provided by the banking institution and service provider are important factors influencing the usage of mobile financial services.

According to Nah, Siau and Sheng (2005), the cost of mobile devices and mobile services is an investment concern. Luarn and Lin (2004) argue that financial cost is one of the greatest concerns in adoption of mobile banking services. It is not viable for consumers to change their way of performing their banking tasks without offering a strong performance-to-price advantage. The price of financial services may have an opposite effect with respect to the use of mobile financial services, which may result in consumers preferring the traditional financial services (Laukkanen et al, 2007). Users agree to pay a reasonable fee to use this service; however this would depend on the banking and service provider. Provision of a lower service cost is also a major benefit for users using mobile banking and performing banking transaction functions through a mobile device; so the “value for money” barrier may be another factor influencing the adoption and use of mobile banking services.

2.5.2 Level of Awareness

Awareness creation speeds the level of use of innovations among the users. Palvia (2009) states that the level of awareness is an important factor in encouraging consumers to use self-service related facilities. The use of mobile phones to perform banking transactions continues to grow at a rapid rate in Kenya. Especially with the advent of M-Pesa and the various mobile banking applications made available by a number of banking.

Awareness campaign about innovations is a necessary step in ensuring that use is effective. Organization of seminars, conferences and workshops for users should be arranged in rural areas. These workshops, seminars and conferences should aim at raising the level of awareness of the

infrastructure challenges, to discuss the users need, to promote and encourage multi-stakeholder approaches, to solicit feedback from management and staff (Gesci, 2007).

2.5.3 Level of Use of Mobile Financial Services

As the use of mobile banking increases, mobile phones are increasingly becoming tools for managing personal finances and tracking spending (Smith, 2012). In a survey conducted by Yurong (2004) about mobile banking, 69 percent of mobile banking users report using their mobile phone to check account balances or available credit before making a large purchase in the past 12 months. Of those who checked their balance or available credit, 50 percent report that they decided not to buy an item because of the amount of money in their bank account or the amount of available credit.

Some smartphone users actively manage their finances on their mobile phones (Baiye, 2012). Baiye (2012) found that 24 percent of MFS users use their phone to track purchases and expenses. Among those tracking their finances on their mobile phones, 43 percent use a service provided by their bank, 34 percent use the web browser to access a website, 31 percent use a mobile application for expense tracking, 15 percent take notes in a notepad or word processor, and 7 percent use a spreadsheet (Baiye, 2012).

2.5.4 User Perceptions of Mobile financial services

Various studies on consumer perceptions of risks were conducted in the context of online banking (Im, Kim and Han 2008), but the perceived risk variable has only been modelled as a single construct. When the perceived risk is modelled as single construct, it fails to reflect on the characteristics of the perceived risk (Lee, 2009).

Lee (2009) conducted a study on perceived risk in the context of Internet (online) banking adoption. The perceived risk was divided into five facets (performance risk, social risk, financial risk, time risk and security risk), which provided a more in-depth understanding of the characteristics of risks regarding Internet banking (Lee, 2009). Mobile banking may be considered an extension of Internet banking, but with its own unique characteristics given that a cell phone is used rather than a web browser on a personal computer (Brown, Cajee, Davies & Stroebel, 2003).

A study by Wu and Wang (2005) on mobile commerce acceptance showed that perceived cost had minimal significance when compared to other variables such as perceived risk, compatibility and perceived usefulness. A further qualitative investigation on the same study was conducted, which revealed that perceived cost is normally a major concern when a technology is first introduced (Wu and Wang, 2005). However, when there is an emergency or sudden need, the utility benefits outweigh the cost issues. The study by Wu and Wang (2005) was conducted on respondents with an average income level of US\$650 per month (equivalent to approximately R5000). This income level was regarded as being a good financial status, implying that the users could afford mobile commerce (Wu and Wang, 2005).

2.6 Conclusion

The study done by Palvia (2009) focused on level of awareness. It found that level of awareness is an important factor in encouragement of consumers to use related self-service facilities. It did not show how other factors like user characteristics and level of awareness can influence the use of mobile financial services something this study will assess. Cracknell (2004) on the other side found that the use of mobile financial services (m-banking or m-payments) systems are less about convenience and more about accessibility and affordability. This study will also add to this knowledge by determining how user perception and level of use about MFS can influence its adoption. Singh (2004) states that male use mobile financial services more than females and MFS users tend to come from high-income groups such as small business owners, salaried employees and senior managers. His study did not concentrate on rural areas, a place this study is focused on.

2.7 Theoretical Framework

Theorists have debated what influences the adoption and use of mobile financial services. This study used adoption and diffusions theory and social learning theory. These theories are all widely tested and used by numerous researches and studies concerning the adoption of mobile service and technology.

2.7.1 Diffusion of Innovations Theoretical Perspective

Diffusion of Innovations Theory (DIT) is one of the oldest social science theories developed by Rogers E.M. in 1962. The theory originated in communication to explain that innovation is communicated through certain channels over time among the members of a social system. According to the theory, messages are concerned with new ideas. The theory states that “Adoption of a new idea, behavior, or product (i.e., “innovation”) does not happen simultaneously in a social system; rather it is a process whereby some people are more apt to adopt the innovation than others” (Rogers, 1962).

Rogers and Kincaid (1981) gives five stages of innovations process namely knowledge, persuasion, decision, implementation and confirmation. An individual seeks information at various stages in the innovation-decision process in order to decrease uncertainty about the innovation. At the knowledge stage, an individual obtains software information that is embedded in a technological innovation; he or she wants to know what the innovation is and how it works. But at the persuasion and decision stages, an individual seeks innovation-evaluation information in order to reduce uncertainty about an innovation’s expected consequences. The decision stage leads to adoption, where a decision is made to make full use of an innovation as the best course of action available, or to rejection, where a decision is made not to adopt an innovation.

The Korean investigation by Rogers and Kincaid (1981) illustrates the importance of village norms in affecting the rate of diffusion of family-planning methods. Their study found big differences from village to village, both in the level of adoption of family planning and in the adoption of particular types of contraceptive methods. Leuthold (1967) concluded from his study of a statewide sample of Wisconsin farmers that the rate of discontinuance was just as important as the rate of adoption in determining the level of adoption of an innovation at any particular

time. In other words, for any given year there were about as many discontinuers of an innovation as there were first-time adopters.

Diffusion of innovations theory predicts that media as well as interpersonal contacts provide information and influence opinion and judgment through communication channels. The theory argues that mass media channels are often the most rapid and efficient means to inform an audience of potential adopters about the existence of an innovation, that is, to create awareness-knowledge. The theory also identifies interpersonal channels as a way of creating awareness. It states that “interpersonal channels are more effective in persuading an individual to adopt a new idea, especially if the interpersonal channel links two or more individuals who are near-peers”. According to the theory, information that creates awareness-knowledge of an innovation seldom comes to individuals from a source or channel of communication that they must actively seek. Information about a new idea can only be actively sought by individuals after they are aware that the new idea exists and when they know which sources or channels can provide information about the innovation (Sill, 1958). Copper et al (1958) found that “A temporal sequence is involved in agricultural communication in that messages are sent out through media directed to awareness, then to groups, and finally to individuals. A farmer upsetting this sequence in any way prejudices progress at some point in the adoption process.”

Bordenave, (1976) explains that the social structure in developing nations has been found to be a powerful determinant of individuals, access to technological innovation; often, structural rigidities must be overcome before the communication of innovations can have much effect. The theory states that adoption of a new idea is the result of human interaction through interpersonal networks. Roling et al, (1976) explain that in order for opinion leaders to spread messages about an innovation, they must have interpersonal networks with their followers. Opinion leaders must be accessible. One indicant of such accessibility is social participation; face-to-face communication about new ideas occurs at meetings of formal organizations and through informal discussions.

The diffusion approach helps connect research-based innovations and the potential users of such innovations. The theory states that innovations often result from research activities; they thus represent scientific results packaged in a form ready to be adopted by users. Innovations may be approved or disapproved for diffusion to users on the basis of their profiles that may have been

factored in at the commercialization phase of the innovation-development process. It would be highly over simplistic to picture the innovation development process as consisting of new technologies that emerge from research, and then spread to users and practitioners where they are adopted and used in an invariant form. Rogers (1981) argues that decentralized diffusion systems more closely follow a convergence model of communication, in which participants create and share information with one another in order to reach a mutual understanding. A fundamental assumption of decentralized diffusion systems is that members of the user system have the ability to make sound decisions about how the diffusion process is managed. This capacity of the users to run their own diffusion system makes the most sense when the users are highly educated and technically competent practitioners so that all the users are experts, or when the innovations being diffused are not at a high level of technology so that intelligent laymen have sufficient technical expertise (Rogers, 1981).

2.7.2 Social Learning Theoretical Perspective

Social Learning Theory (SLT) was developed by Professor Albert Bandura in 1977 at Stanford University. The theory has a direct applicability to diffusion networks. Most psychological approaches to human learning look within the individual in order to understand how learning occurs. But the social learning approach looks outside of the individual at information exchanges with others in order to explain how behavior changes. The theory states that “an individual learns from another by means of observational modeling; that is, one observes what another person is doing, and then does something similar” (Bandura, 1977). The basic perspective of social learning theory is that the individual can learn from observation of other people's activities, so the individual does not actually need to experience a verbal exchange of information in order for the individual's behavior to be influenced by the model. Thus, nonverbal communication is considered important in behavior change (as well as verbal communication). Social learning theory recognizes external factors to the individual as important in behavior change; it is essentially “social” viewing communication as causing change, along with the individual's psychological make-up. The individual can learn a new behavior by observing another individual in person or via the mass media. Social modeling can occur in interpersonal networks or by a public display by someone with whom one is unacquainted.

There is much in common between social learning theory and adoption of innovations. Just like diffusion of innovations theory, social learning theory seeks to explain how individuals change their overt behavior as a result of communication with another individual. Interpersonal networks are thus thought to be fundamental to behavior change, although neither theory claims that identical mimicking must occur. The theory also stress information exchange as essential to behavior change, and view such network links as the main explanation of how individuals alter their behavior.

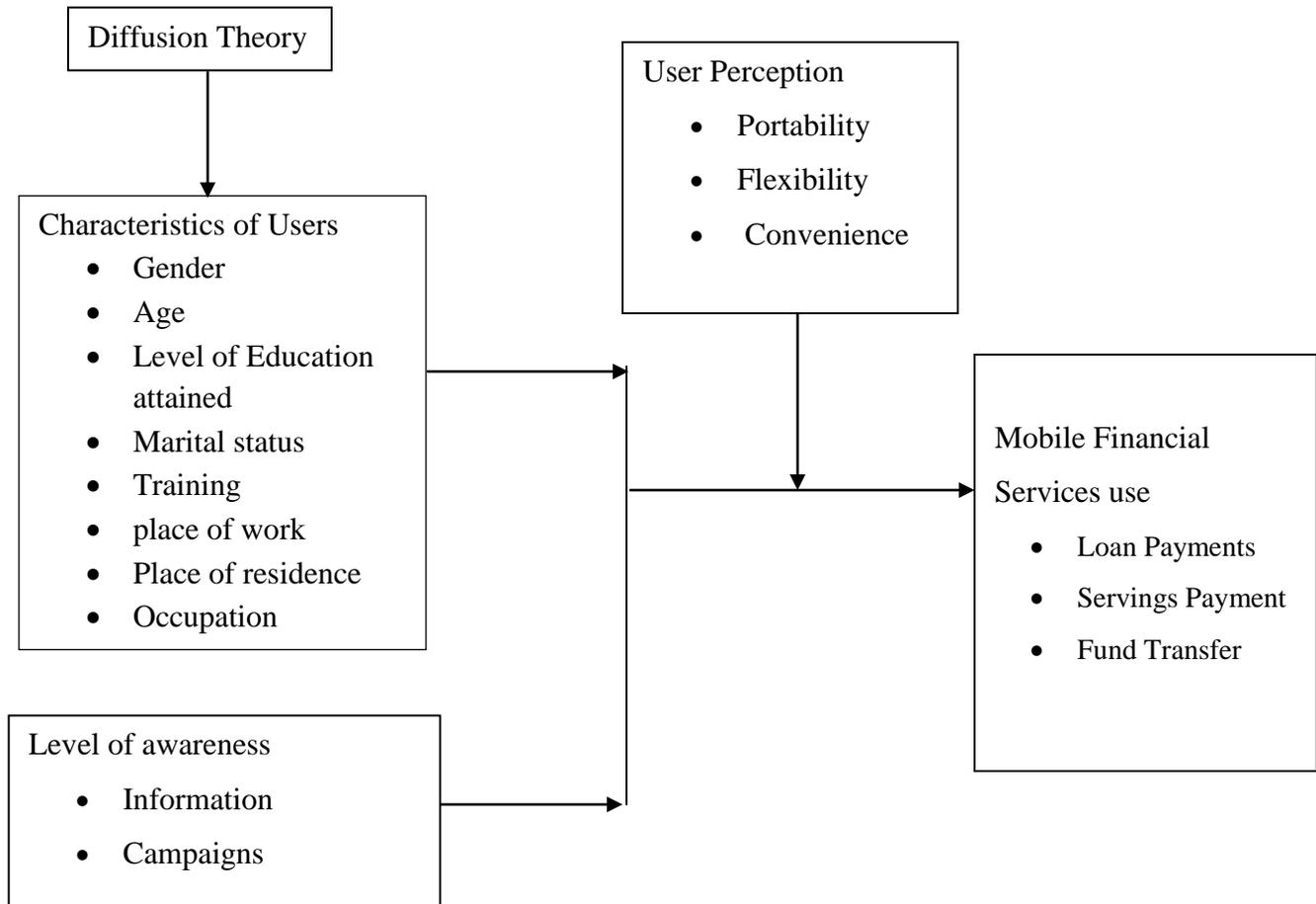
Diffusion research has been more aggregate in measuring the effects of modeling as a crude dichotomy of either adopting or rejecting an innovation. Social learning perspective encourages diffusion researchers to measure more exactly what the individual learns through a network link with an adopter of an innovation. This detailed learning include resources of time, money, effort, skills and mastery of technical jargon necessary for the individual to adopt an innovation. The details give the profile of the users of innovations.

2.8 Conceptual Framework

Independent Variables

Intervening Variable

Dependent Variable



The diffusion theory helps connect innovations and the potential users of such innovations. The users of innovations differ in their level of characteristics (age, gender, marital status, occupation and level of education). According to the theory, innovations may be approved or disapproved for diffusion to users on the basis of their profiles that may have been factored in at the commercialization phase of the innovation-development process.

2.9 Operational Definitions of Variables of Study

Characteristics of Users - These are the attributes or profile of individuals who are using mobile financial service.

Level of Awareness - This means having knowledge or discernment of something or a product.

Level of Use - This refers to the frequency user's use their MFS by use of their mobile phones.

User Perceptions – This refers to the organization, identification, and interpretation of sensory information in order to represent and understand the environment.

Table 1: Operationalization of Variables and Indicators

Objective	Variables	Indicators	Data analysis method
To analyze Mobile Financial Services use by business operators in Kakamega Town.	Mobile Financial Services Use	<ul style="list-style-type: none"> • Loan Payment • Savings Payment • Fund Transfer 	Descriptive Statistics
To find out the characteristics of Mobile Financial Services use by business operators in Kakamega town	Characteristics of Mobile Financial Services Users	<ul style="list-style-type: none"> • Gender • Age • Level of education 	Descriptive Statistics
To analyze the level of use of Mobile Financial Services contributes to performance by business operator in Kakamega town	Level of Use	<ul style="list-style-type: none"> • MFS account • Duration • Time 	Descriptive Statistics
To find out user perceptions of Mobile Financial Services contribute to performance by business operators in Kakamega town	User Perceptions of Benefits	<ul style="list-style-type: none"> • Portability • Flexibility • Convenience 	Descriptive Statistics

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes the area of study, the research design, sampling techniques, sources of data, and its collection and analysis.

3.2 Site of the Study

The study was conducted in Kakamega County, Kakamega town. Kakamega County is a county in the former Western Province of Kenya. Its capital and largest town is Kakamega. The county has a population of 1,660,651 and an area of 3,033.8 km². The average elevation of Kakamega is 1,535 meters. Kakamega County is Kenya's second most populous county after Nairobi. The county has 9 sub-counties in total namely Butere, Mumias, Matungu, Khwisero, Shinyalu, Lurambi, Ikolomani, Lugari and Malava. The county lies within an altitude of 250-2000m. The average temperature in the county is 22.50^C most of the year.

Local Inhabitants are mostly the *Luhya* tribe, whose economic activity is mainly farming and fishing. The town is located near two major sugar producing firms, Mumias and Kabras Sugar companies. Kakamega was the scene of the gold rush in the early 1930s, fueled partly by the reports of the geologist Albert Ernest Kitson (Shilaro, 2004). Masinde Muliro University of Science and Technology is a new institution of higher learning created by an Act of Parliament in December 2006 which is in the heart of Kakamega town on the Kakamega-Webuye road. It is expected to spur growth in this capital of Western Province. Kakamega Forest is the main tourist destination in the area. Another attraction is the Crying Stone of Ilesi located along the highway towards Kisumu. It is a 40 meters high rock dome resembling a human figure whose "eyes" drop water. The town was purposively selected for this study due to its rural representation and economic activities in the town. It determined how MFS have contributed socially and economically to the people working in the town and students within the town. The study studied their characteristics and looked at their level of awareness, level of use and the perception they had on MFSs.

3.3 Research Design

This research study adopted a cross-sectional research design approach. This type of study utilized different groups of people who differed in the variable of interest, but shared other characteristics such as socioeconomic status, educational background and ethnicity. Cross-sectional studies were observational in nature and were known as descriptive research, not causal or relational. Researcher recorded the information that was present in a population, but she did not manipulate variables.

3.4 Sampling of Sub-sites

3.4.1 Business Streets

Strydom and Venter (1996) describe sampling as the process of taking a portion of a population as its representative. The process of sampling is necessary due to large size of a population and the consequent impracticality and prohibitive cost of testing its members (Denzin, 2000). The study used streets in Kakamega town to group the town into blocks sampled 5 blocks namely Mega Mall Street, Ambwere Street, Ankoi Street, Canon Road and Khasakhala Road.

3.4.2 Mobile Users.

Systematic sampling technique was used to sample MFS operators from each street. Using systematic sampling at the beginning of each street the researcher sampled every fifth MFS operator that was found on either side until the sample of 15 operators from the streets.

3.4.3 Key Informants

The study used 8 Key Informants. Two informants came from each of the MFS providers. This was because they were knowledgeable and understood the use of MFS among their operators.

3.5 Data Collection

Both quantitative and qualitative data were collected in this study. Quantitative data were collected using questionnaires. These comprised closed and open-ended questions and were administered to MFS operators in the sampled blocks. A semi structured interview guide was used for the Key Informants.

3.6 Data Analysis

Kerlinger (2000) points out that, data analysis means categorizing, ordering, manipulating and summarizing of data to obtain answers to research questions. Before processing the responses, the completed interview guide was edited for completeness and consistency. Content analysis technique was used to analyze the data collected. This was used for qualitative data in the study and involved observation and detailed description of objects, items or things.

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents analysis of the contribution of Mobile Financial Services (MFS) to businesses in Kakamega Town. The study targeted a sample size of 75 MFS operators and 8 Key Informants. The researcher managed to administer questionnaires to all the MFS operators and interview guides to 7 Key Informants, which constituted a response rate of 98.8 percent of the targeted sample. Respondents who did not respond (1.2%) showed no interest and some claimed to be busy hence did not return the research instruments.

The collected data from the field was analyzed and interpreted and are presented in this chapter through application of descriptive statistics. The research findings are presented using the measures of central tendency and dispersion, simple tables with percentages and simple figures, graphs, pie and bar charts.

4.2 Contribution of Mobile Financial Services

The study focused on four MFS: M-pesa, M-shwari, Linda Jamii and Mbao Pension Plan.

4.2.1 M-pesa

M-Pesa is operated by Safaricom and Vodacom, mobile network operators (MNO) not classed as deposit-taking institutions, such as a bank. M-Pesa customers can deposit and withdraw money from a network of agents that includes airtime resellers and retail outlets acting as banking agents (Morawczynski and Miscione, 2008). The service enables its users to: deposit and withdraw money; transfer money to other users and non-users; pay bills, purchase airtime; and transfer money between the services in some markets like Kenya, a bank account. A partnership with Kenya-based Equity Bank launched M-KESHO, a product using M-PESA's platform and agent network that offers expanded banking services like interest-bearing accounts, loans, and insurance (Mas and Morawczynski, 2009).

4.2.2 M-Shwari

The Commercial Bank of Africa (CBA) in partnership with Safaricom introduced a fixed deposit feature on M-Shwari platform dubbed Lock Savings Account. The service allows customers to borrow a minimum of KShs 500 for six months at interest rates of up to six per cent per annum. CBA announced the new feature banks on the strength of recurrent customer feedback which suggested the need for a facility to instill discipline in medium term savings towards a specific goal (IFC, 2013). The study found that M-Shwari service has seen CBA's loan accounts grow by more than 800 per cent from 89,000 in 2012 to 897,000 in December 2013 with over seven million customers who have in the last two years transacted more than Sh156 billion and taken out loans worth Sh13 billion. It was found that M-Shwari enables customers to open and operate an M-Shwari bank account through their mobile phone, via M-PESA, without having to visit banks or fill out any forms. It provides customers the ability to move money in and out of M-Shwari savings account to M-PESA account at no charge. It gives its customers an opportunity to save as little as Ksh.1 and earns interest on their saving balance. The innovation enables customers to access micro credit product (loan) of a minimum of Ksh.100 any time and receive their loan instantly on their M-PESA account (IFC, 2013).

4.2.3 Linda Jamii Services

The services innovation is an inpatient and outpatient medical scheme with funeral expenses benefits built into it. Members are required to produce their Linda Jamii e-card or unique ID number and a national identification card. Members are required to seek out-patient treatment in the accredited medical facilities (Gathara, 2014). The out-patient cover includes amongst others: consultation, laboratory services, drugs administration and dispensing and inpatient covers consultation, laboratory services, drugs administration and dispensing and bed. Dental treatment include; dental consultation, cost of filling, x-rays and extractions including surgical extractions together with anesthetics fees, hospital and operating theatre cost while optical treatment include cost of eye testing, cost of eye glasses, and frame (USAID, 2010).

4.2.4 Mbao pension Plan

This innovation is an individual account savings plan to which all workers in Kenya may contribute without regard to income or age. It is designed to provide a programme that is suitable for the unique nature of the informal sector and to encourage a savings culture for those workers (Musonye and Turner, 2013). The key innovation is that low-income workers can easily make small contributions at relatively low cost, considering the small contributions and small account balances. Participants can conveniently make contributions anytime and anywhere using their cell phones. This savings innovation is made possible by technological innovations that have reduced the costs of cell phones and airtime, and by the entrepreneurial innovation of mobile money (Musonye and Turner, 2013).

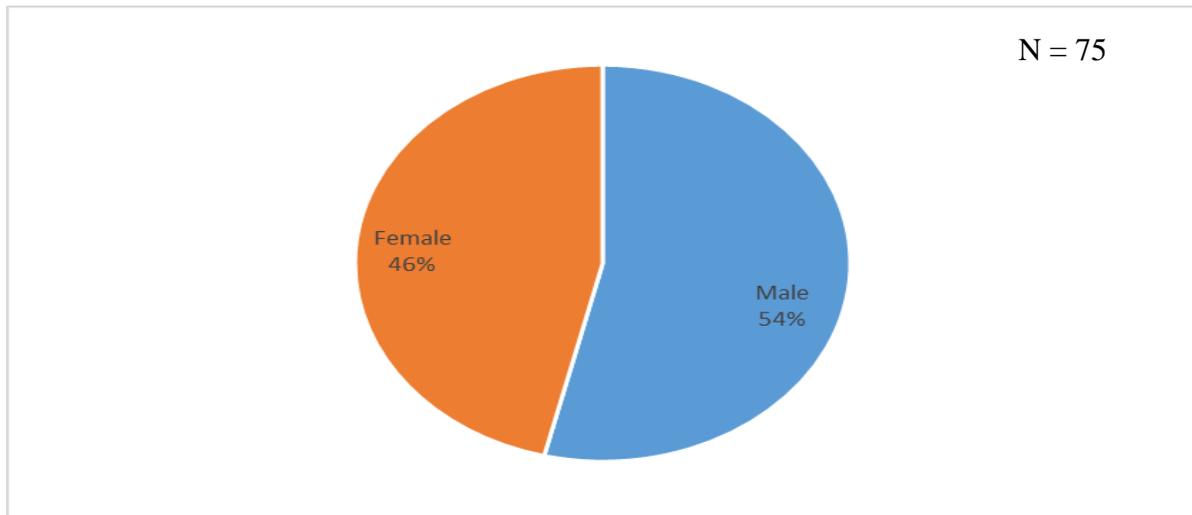
4.3 Characteristics of Users

The first objective of this study was to analyze how characteristics of users contribute to mobile financial services amongst business operators in Kakamega town. These included: gender, age, level of education, marital status, information on training, place of work, place of residence and occupation.

4.3.1 Gender of the Respondents

Figure 1 show that majority of the respondents comprised of males (54%) while females were 46 per cent. This gender distribution was influenced by cultural restrictions on the female owning MFS accounts. Therefore, the study found that 54% of the respondents in Kakamega town with MFS accounts were males. The finding concurs with Singh (2004) who stated that males use MFS more than females.

Figure 1: Respondents' Gender



4.3.2 Age of the Respondents

Table 2: Distribution of the Respondents by Age Bracket

Table 2 shows distribution of respondents categorized in various age groups. Majority of the respondents (82.7%) were between 21 to 30 years, 11.4% were 41 years while 5.3% were 31 to 40 years. The finding indicated that in Kakamega town; more young people aged 21 to 30 years used mobile financial services. This showed that MFS were more embraced by young people than old people in the town.

Age	Frequency	%
21 to 30 years	62	82.7
31 to 40 years	4	5.3
41 years and above	9	11.4
Total	75	100

4.3.3 Level of Education of the Respondents

Table 3 shows the level of education attained by the respondents. The study found that most of the respondents (57.3%) had tertiary education level 33.3% had secondary education and 9.3% had upper primary. The finding indicates that most of the mobile users in Kakamega town had tertiary education.

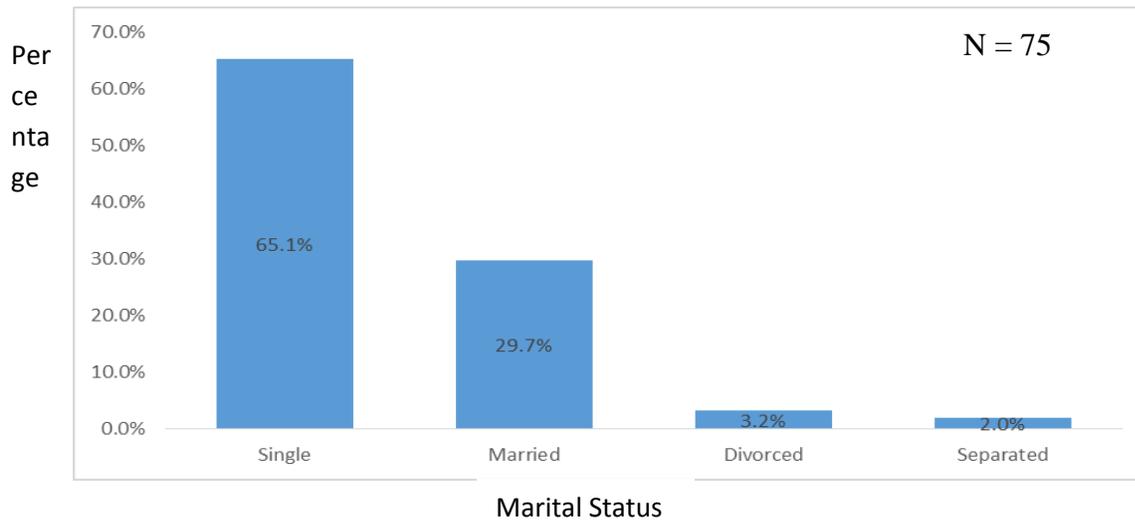
Table 3: Level of Education

Education	Frequency	%
Upper Primary	7	9.3
Secondary	25	33.3
Tertiary (Diploma and above)	43	57.3
Total	75	100

4.3.4 Marital Status of the Respondents

Figure 2 shows marital status of the respondents. Most of the respondents were single (65.1%) while a smaller portion was married (29.7%). Out of the total respondents, some had divorced (3.2%) while some had separated (2%). The findings indicate that 65.1% of MFS users in Kakamega town are single, possibly owing to their youthful age.

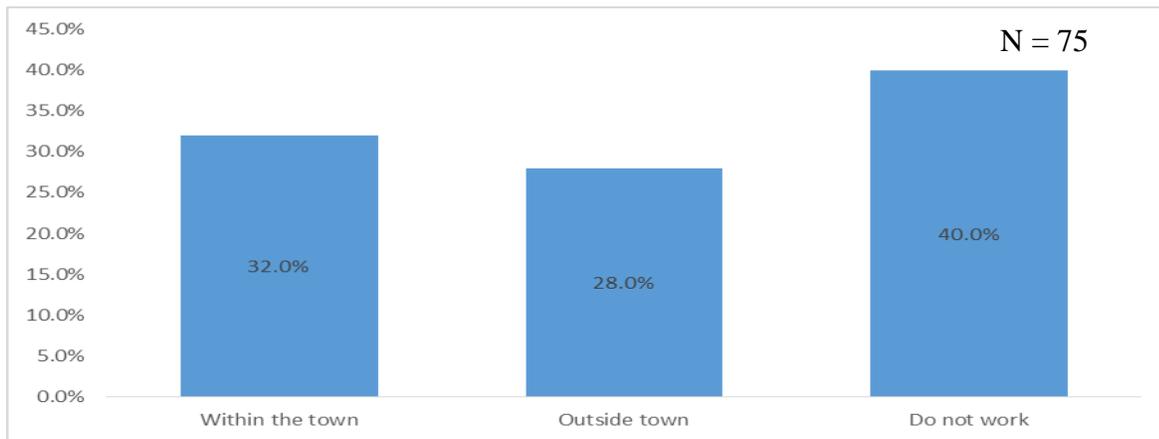
Figure 2: Marital Status of the Respondents



4.3.6 Place of Work

When asked about their place of work, 32% of the respondents stated that they worked within Kakamega town, 28% worked outside Kakamega town while 40% indicated that they do not work. Figure 3 indicate that most of the mobile financial users work within the town. However, 40% of MFS users are not in employment. All the respondents stated that they lived in Kakamega

Figure 3: Place of Work



4.4 Level of Awareness

This second objective of this study was to find out how the levels of awareness contributed to the use of mobile financial services by business operators in Kakamega town. The respondents reacted on various awareness measures. They were asked if they had heard about the four types of MFS and how they had become aware of the MFS.

4.4.1 Responses on Mobile Financial Services.

Mobile Financial Services help the poorest in society reduce income inequality by increasing opportunities for the poorest segments of society to experience the benefits of financial services and hence mitigate income and expenditure volatility. The level of awareness has to be high in order to understand the opportunities available with the MFS. In addition to a reduction in measured inequality, MFS bring many other important benefits within reach, in particular, education and healthcare by providing access to insurance to help mitigate the impact of unexpected shocks. These in turn had critical long-term impact on development, especially rural development.

Table 4 shows that all the respondents had previously heard about M-Pesa. They indicated that M-Pesa was operated by Safaricom and offered money transfer and mobile banking services. Sixty five per cent of the respondents had heard about M-Shwari while 35% had not heard of it. For those who had heard of M-Shwari, they indicated that the service is offered by Commercial Bank of Africa and Safaricom offered paperless banking, savings with interest and instant loan services. About Linda Jamii, 51% had heard of it while 49% had not heard of it. For those who had heard about it, they indicated that the service was provided by Britam, Chagamka Micro-insurance and Safaricom offering medical scheme services in inpatient and outpatient medical schemes with funeral expenses benefits. Lastly, 43% only had heard about Mbao pension plan and indicated that it was operated by Private-sector businesses and Safaricom and offered individual account savings plan.

The finding indicates that MFS users are well aware of M-Pesa than other MFS services and the level of awareness of the available mobile financial services was high.

Table 4: Awareness by the respondents of the MFS

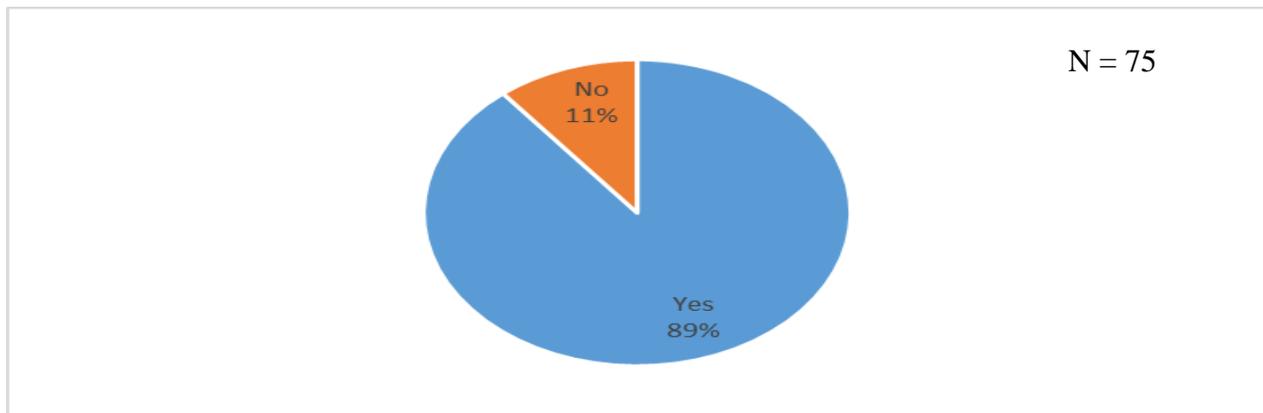
Type of Service	Yes (%)	No (%)	Total (%)	N
M-Pesa	100	0	100	75
M-Shwari	65	35	100	75
Linda Jamii	51	49	100	75
Mbao pension plan	43	57	100	75

One key informant from M-Shwari explained that “mobile users were aware of MFS though it depended with age. The young are more aware as compared to the people of age bracket of 60 years and above”. Another key informant from M-Pesa indicated that “youths are more excited and willing to adopt it in the future but MFS is still complicated to the elderly.” The level of awareness is an important factor in encouraging consumers to adopt related self- service facilities and also speeds the level of adoption of innovations among the users”.

4.4.2 Sources of the Respondents Awareness of the MFS

Figure 4 shows that there had been awareness campaigns which 89% of the respondents agreeing while 11% disagreed. One key informants explained that, “media, TV stations especially the one commonly viewed (KBC, KTN, NTV and Citizen), radio stations more specifically vernacular stations, roadshows and exhibitions, advertisements and one on one presentations were used to raise awareness campaign in the town.”

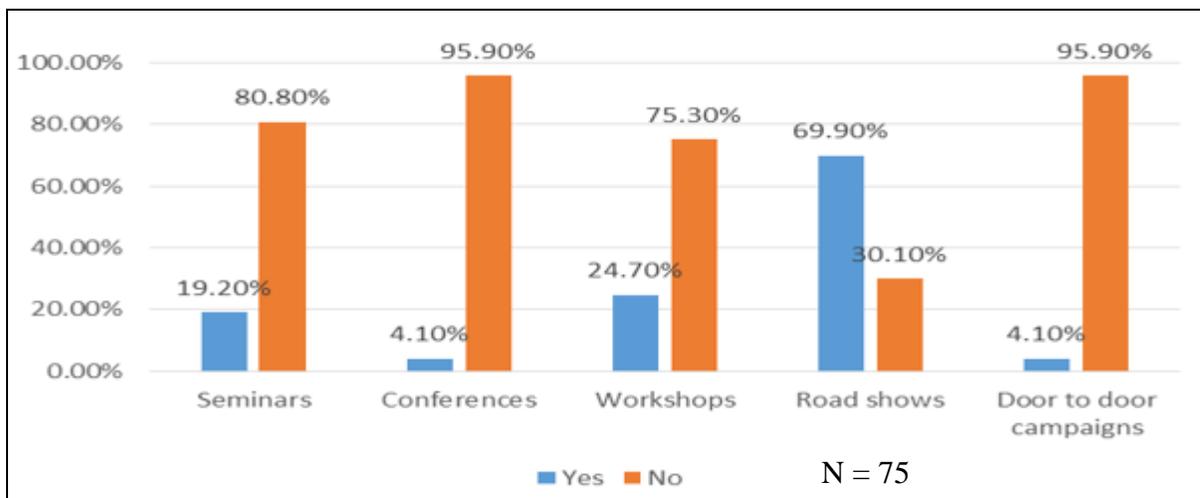
Figure 4: Respondents Awareness of Campaigns



4.4.3 How Users became Aware of Mobile Financial Services

The study found that users were aware of mobile financial services through trainings and road shows. On road shows, 69.9% of the respondents indicate that they were aware through road shows. On trainings, 24.7% of the respondents were aware of MFS through workshops (24.7%), seminars (19.2%) and conferences (4.1%). This shows that respondents had no training on MFS but heard of it in workshops seminars and conferences they attended. However, 4.1% stated that they were aware through door-to-door campaigns. Figure 5 indicates that road shows were the major type of awareness campaign in the town. One Key Informant said that “workshops, seminars and conferences reported by respondents were aimed at raising the level of awareness of the infrastructure challenges, to discuss the users need, to promote and encourage multi-stakeholder approaches and to solicit feedback from management and staff”.

Figure 5: Sources of Awareness of the Respondents



4.5 Level of Use of Mobile Financial Services

The third objective of this study was to analyze how the level of use contributed to performance of mobile financial services by business operators in Kakamega town. The respondents reacted on questions with regard to level of use of MFS. Respondents were asked if they opened an MFS account with the operators, how often they used their accounts, what benefits or problems they encountered and the extent to which they agreed on level of use statements.

We found that as the use of mobile banking increases, mobile phones are increasingly becoming tools for managing personal finances and tracking spending. Of the respondents, 69 percent reported that customers used their mobile phones to check account balances or available credit before making a large purchase in the past 12 months. Of those who checked their balance or available credit, 50 percent reported that they decided not to buy an item because of the amount of money in their bank account or the amount of available credit. This had increased the quality of their social life since they did not need to walk to banks for such transactions. Economically, the transaction costs generate revenue to MFS providers hence increasing tax which are payable to the state. Collected taxes were used in developing social amenities for the citizens by the state.

Because many consumers had near-constant access to their mobile phones, these devices had the potential to provide “just-in-time information” that could influence consumer financial behavior and help them to make different, and perhaps smarter, financial decisions. The actions consumers take in response to the receipt of text message or e-mail notices from their financial institutions demonstrated some of the potential effects of this technology for encouraging consumers to engage in different financial behaviors that might prove to have beneficial outcomes.

4.5.1 Account with MFS

When asked the time they had opened an account with the MFS, for M-Pesa, respondents did not know when they opened an account but they used it because they could transfer and receive money as well as do mobile banking services (Table 5). For M-Shwari, 65% users had been having their account for more than a year for banking, saving and get instant loans while 35% indicated that they had not heard of it and were not interested. For Linda Jamii, 51% of users had been having their account for more than a year for Medical cover and funeral expense benefits while 49% had not heard of it. For Mbao pension plan, 57% of the users indicated that they had not heard of it and were not interested while 43% had been having it for a year because of savings plan.

Table 5: Respondents with Accounts with MFS

Type of Service	Yes (%)	No (%)	Total (%)	N
M-Pesa	100	0	100	75
M-Shwari	65	35	100	75
Linda Jamii	51	49	100	75
Mbao pension plan	43	57	100	75

4.5.2 Level of Access of MFS

Mobile Financial Service provided existing banking customers with a highly accessible portal for financial services, increasing convenience. The frequency of interactions between customers and financial providers is enhanced through this mobile portal, allowing for convenient mobile banking and the use of Internet applications on smartphones.

While bill payment offerings through mobile financial services are well established, other basic offerings that could serve a large portion of the population are just getting off the ground or have yet to begin. Savings and remittance products are in their starting phase, insurance offerings exist only through phones and credit products have yet to take hold.

When asked about frequency of use, all of the M-Pesa respondents (100%) indicated that they used their account at least every week. Linda Jamii users used their account once or twice a month (93%), Mbao pension plan users used their account once or twice a month while M-Shwari users used their account fortnightly (87%). Table 6 indicates that M-Pesa users embraced their account actively than those of other MFS accounts.

Table 6: Level of Access of the Respondents to the MFS Accounts

Type of Service	More often (Daily) (%)	Often (Weekly) (%)	Not so often (Fortnight) (%)	Rarely (Monthly) (%)	Total (%)	N
M-Pesa	83	17	0	0	100	75
M-Shwari	0	12	87	1	100	75
Linda Jamii	0	7	26	67	100	75
Mbao pension plan	0	5	74	21	100	75

4.5.3 Perceptions of Benefits and Problems

Table 7 shows that more respondents noted that M-Pesa allows you to make transactions quickly, safely and affordably by using SMS technology. This had many benefits to customers in terms of convenience, security and ease of use. The service was affordably priced, and receivers could access funds at all times. However, M-Pesa services had a limit in that the charges increased depending on the amount transferred.

M-Shwari is paperless (mobile centric), safe and fast service that allowed you to save; borrow through your phone; M-Shwari has competitive interest rates on savings; which were calculated daily and paid out at the end of each calendar quarter; there was no minimum balance on M-Shwari; there were no ledger fees; and there are no withdrawal charges in moving money between M-Shwari account and M-pesa. However, M-Shwari loan amount was dependent on usage of Safaricom services like Data and M-pesa among other.

Linda Jamii provided hospitalization care benefit, outpatient care benefit, daily hospital cash benefit, funeral assistance benefit, family size covered and healthcare cost. However, one could go to a hospital and find that his record was not found and wait for long hours before records were sent to the hospital. Mbao pension plan provided savings opportunity for low income earners.

4.5.4 Respondents Perceptions of Frequency of Use of Mobile Financial Services

Table 7 shows that most of the respondents were in agreement that since they could access their accounts, charges were lower than those of banks with a mean score of 65%, easy to have money with MFS (57%), easy to remit money to other parties (53%), easy to access their accounts from anywhere (45%) and easy to check their balance anytime (47%). The findings indicated that mobile users in Kakamega town agreed that since they could access their account, charges were lower than those of banks. The ability to allow consumers to have more control over their financial situation was one attraction of mobile financial services, as consumers preferred to act for themselves when dealing with their own monetary transactions through the mobile device.

Table 7: Statements on Level of Use of Mobile Financial Services

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total (%)	N
Easy to access my account from anywhere	Percentage	13	32	13	31	11	100	75
Easy to check my balance anytime	Percentage	15	33	17	24	11	100	75
Easy to remit money to other parties	Percentage	15	39	12	23	12	100	75
Charges are lower than those of banks	Percentage	12	53	12	13	9	100	75
Easy to have money with MFS	Percentage	17	40	12	20	11	100	75

4.5.5 Saving Money with any of MFS Account

Table 8 shows that all respondents had transacted with M-Pesa to a tune of more than Ksh 50,000, 73% had borrowed more than Ksh 40,000 from with M-Shwari, 66% had saved more than Ksh 40,000 with Linda Jamii while 91% had saved more than Ksh. 40,000 with Mbao pension plan. The finding indicates that low income MFS users had an opportunity to save money into their accounts for future benefits.

Table 8: Respondents Reports about Saving Money with any of MFS Account

		Less than Ksh. 9000	Ksh 10000 - 19000	Ksh 20000 - 39000	Ksh 40000 - 49000	Over Ksh 50000	Total (%)	N
M-Pesa	Percentage	0	0	0	0	100	100	75
M-Shwari	Percentage	0	12	15	43	31	100	75
Linda Jamii	Percentage	12	11	13	49	15	100	75
Mbao Pension Plan	Percentage	0	0	9	52	39	100	75

4.6 User Perceptions of Mobile Financial Services

The fourth objective was to find out how user perceptions contributed to mobile financial services use by business operators in Kakamega town. We asked respondents about their perceptions MFS, extent of agreement with characteristics of MFS and characteristics of MFS.

4.6.1 Perception of Mobile Financial Services

From the findings, majority of the respondents (83.5%) had a positive perception about MFS, 11.4% had a negative perception and 5.1% did not know (Table 9). This indicated that mobile users in Kakamega town had a positive perception towards mobile financial services. The level of perception is important in any product that penetrates into the market. Once the users have a positive perception, it means that they like the innovation which makes use easier.

Table 9: Perception of Mobile Financial Services

Perception	Frequency	Percent
Positive	63	83.5
Negative	9	11.4
I don't know	4	5.1
Total	75	100

Mobile financial services lower some of the key barriers to banking inclusion by reducing start-up costs and service prices, as well as by delivering the banking products that meet the particular needs of particular users. Respondents perceived MFS as widespread network coverage which allows for around-the-clock account access and eliminates travel time and costs. Furthermore, mobile banking gives customers access to additional products, such as credit and insurance policies, thereby breaking the manual cycle and providing users with a much needed opportunity to build credit histories.

4.6.2 Characteristics of Mobile Financial Services

When asked about characteristics of mobile financial services, majority of the respondents were in agreement that flexibility, accessibility and portability influenced the level of use of MFS in Kakamega town having scores of 86%, 85% and 83%, respectively. Few respondents agreed that convenience and cost influenced the level of use of MFS with scores of 64% and 59%, respectively (Table 10). This finding indicated that flexibility, accessibility and portability influenced the use of mobile financial services in the town.

Table 10: Level of Agreement on MFS characteristics

		Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Total (%)	N
Cost	Percentage	13	32	12	32	11	100	75
Convenience	Percentage	15	32	17	25	11	100	75
Accessibility	Percentage	43	42	9	4	2	100	75
Portability	Percentage	11	53	12	13	11	100	75
Flexibility	Percentage	17	39	12	21	11	100	75

One Key Informant from Linda Jamii explained that when systems are slow clients give up using the MFS. Another M-Pesa Key Informant stated that “the innovation eased the queues and was more convenient to customers and they could transact at the comfort of their office and homes”. Around the globe, various initiatives use the mobile phone to provide financial services to those without access to traditional banks. The M-Shwari Key Informant indicated that “the use of

mobile financial services (m-banking or m-payments) systems are less about convenience and more about accessibility and affordability”. Mbaio Pension Plan Key Informant contended that “the flexibility of being able to use the service wherever and whenever the users wanted enabled immediate completion of banking tasks (transferring money or paying a bill). Location free access creates convenience in requesting account balances”.

The respondents further commented on the characteristics of MFS. Table 11, most of the respondents were in agreement that they needed to learn a lot of things before they could get going with this service and most people would learn to use this service very quickly having scores of 88% and 91%, respectively (Table 11).

Table 11: Statements on Characteristics of Mobile Financial Services

		Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Total (%)	N
I think the system is easy to use	Percentage	49	12	12	23	4	100	75
I often need support from somebody to be able to use this service	Percentage	57	12	9	19	3	100	75
Most people would learn to use this service very quickly	Percentage	39	20	15	21	5	100	75
I find the service very cumbersome to use	Percentage	51	13	12	19	5	100	75
I needed to learn a lot of things before I could get going with this service	Percentage	79	9	5	7	0	100	75
If the service charges extra I will not consider using it	Percentage	59	13	12	11	5	100	75
Overall I’m satisfied with the service	Percentage	61	13	11	9	5	100	75
I think the system is easy to use	Percentage	52	13	13	15	7	100	75

Respondents also agreed that if the service charges extra they could not consider using it and overall they were satisfied with the service with scores of 72% and 75%, respectively. Few respondents agreed that they thought the system was easy to use with a score of 61%. This indicated that MFS users needed to learn a lot of things before they could get going with those services and most people would learn to use it very quickly. The users also believed that if the service charged extra they would not consider using it and overall they were satisfied with the service. The SMS service was the easiest way to check account balances and latest transactions via mobile phone. Speed of data transmission and the user interface impaired the added value of mobile services. Therefore, the characteristics of the service as perceived by the user and provided by the banking institution and service provider were important factors influencing the usage of mobile financial services.

4.7 Conclusion

Based on characteristics of users, 82.7% of the respondents were young; more than 57.3% were better educated, single and self-employed. MFS products are tailored to customers according to their characteristics and are thus more relevant and meaningful. Banking becomes much more accessible and affordable. MFS leads overall to a reduced reliance on cash. In addition, those MFS users who were previously unbanked benefit from mitigated income volatility and expense shocks. Economically, MFS increases financial inclusion which leads to GDP growth, the sparking of entrepreneurship and job creation and the formalization of funds and government revenues. Other operators felt direct economic effects as well, such as government, through the facilitation of e-governing and the reduction in the cost of aid disbursement; and private firms, through lower costs of financial transactions.

On education characteristic, MFS have an effect socially. MFS, which leads to economic growth, means an overall reduction in population inequality. Families and small businesses are able to respond to shocks and because of the effects MFS have on education, health and entrepreneurship, MFS operators have the opportunity to lead improved lives. Informal channels of financial services, with the inherent risks of leakage, fraud, and corruption, can be behind them and instead users can make use of the formal, more transparent channels of mobile financial services.

Based on the level of awareness, the level of awareness is an important factor in encouraging of consumers to use related self-service facilities. Awareness campaigns about innovations are a necessary step in ensuring that MFS use is effective. Organization of seminars, conferences and workshops for users should be arranged in rural areas. Respondents did not know when they opened an account but they used it because they could transfer and receive money as well as do mobile banking services. M-Pesa users embraced their account actively than those of other MFS accounts. Mobile users in Kakamega town had a positive perception towards mobile financial services. The level of perception is important in any product that penetrates into the market. Once the users have a positive perception, it means that they like the innovation which makes use and adoption easier.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

The purpose of this study was to find out the factors contributing to mobile financial services use by business operators in Kakamega town, Kenya. Objectives of the study were to: analyze how characteristics of users contribute to the use of mobile financial services by business operators in Kakamega town; find out how the level of awareness contribute to the use of mobile financial services by business operators in Kakamega town; analyze how level of use contribute to the performance of mobile financial services by business operators in Kakamega town; and find out how user perceptions contribute to the performance of mobile financial services by business operators in Kakamega town.

Characteristics of Users

The study found that the benefits of MFS vary depending on user characteristics and the level of mobile penetration into the region. The benefits however increase depending on the percentage increase of financial inclusion. The study found that MFS have increased economic growth in Kakamega since it has fueled entrepreneurship and new business creation. Taxes paid by MFS businesses are as result used by the Government to create and improve social amenities in Kakamega town. The study found that in Kakamega town, majority of the businesses were run by men which were represented by 54% of the businesses. More young people aged 21 to 30 years have become entrepreneurs in Kakamega town than adults of more than 30 years. It found that most of the MFS operators in Kakamega town had tertiary (Diploma and above) education. It also found that majority of MFS operators in Kakamega town were single, possibly owing to their youthful age. No operator had received training of MFS but had only received basic information on how to use MFS from friends, relatives and operators.

Level of Awareness

The study found that 65% of the respondents have heard about M-Shwari. They stated that the service is offered by Commercial Bank of Africa and Safaricom offering paperless banking, savings with interest and instant loan services. About Linda Jamii, 51% had heard of it indicating that the service was provided by Britam, Changamka Micro-insurance and Safaricom offering medical scheme services in inpatient and outpatient medical schemes with funeral expenses benefits. About Mbao pension plan, 43% only had heard about it indicating that Mbao pension plan was operated by Private-sector businesses and Safaricom and offered individual account savings plan. We found that mobile users were aware of MFS though it depended with age. The young are more aware as compared to the people of age bracket of 60 years and above (M-Shwari Key Informant). Key informants from M-Pesa indicated that “youths are more excited and willing to adopt it in the future but MFS is still complicated to the elderly. The level of awareness is an important factor in encouraging of consumers to adopt related self- service facilities and also speeds the level of adoption of innovations among the users”.

Level of Use of Mobile Financial Services

The study found that as the use of mobile banking increases, mobile phones are increasingly becoming tools for managing personal finances and tracking spending. The study found that operators serve more clients because of the high level of use of the service hence helping them from travelling long distances for financial transactions. The study found that since many consumers have near-constant access to their mobile phones, these devices have the potential to provide “just-in-time information” that can influence consumer financial behavior and help them to make different and perhaps smarter, financial decisions.

The study found that M-Pesa operators felt users did not know when they opened an account but they did because they could transfer and receive money as well as do mobile banking services. For M-Shwari, operators indicated that users had been having their account for more than a year for banking, saving and get instant loans while Linda Jamii users had been having their account for more than a year for Medical cover and funeral expense benefits. M-Pesa operators indicated that users embrace their account actively than other MFS accounts in Kakamega town. The study found that mobile operators in Kakamega town agreed that since they could access their account,

charges were lower than those of banks. The ability to allow consumers to have more control over their financial situation was one attraction of mobile financial services, as consumers' preferred to act for themselves when dealing with their own monetary transactions through the mobile device.

User Perceptions

The study found that mobile financial services lower some of the key barriers to banking inclusion by reducing start-up costs and service prices, as well as by delivering the banking products that meet the particular needs of users. Respondents perceived MFS as widespread network coverage which allows for around-the-clock account access and eliminates travel time and costs. The study found that mobile users in Kakamega town had a positive perception towards mobile financial services. The level of perception is important in any product that penetrates into the market. Once the users had a positive perception, it means that they like the innovation which makes adoption easier. We found that flexibility, accessibility and portability influence the performance of mobile financial services in the town. Key Informants from Linda Jamii and M-Shwari explained that when systems are slow clients give up using the MFS. M-Pesa Key Informant stated that "the innovation eased the queues and was more convenient to customers and they could transact at the comfort of their office and homes". M-Shwari Key Informant indicated that "the use of mobile financial services (m-banking or m-payments) systems are less about convenience and more about accessibility and affordability". The study found that MFS users needed to learn a lot of things before they could get going with those services and most people would learn to use this service very quickly. The users also believed that if the service charges extra they would not consider using it and overall they were satisfied with the service.

5.2 Conclusion

Mobile financial services use help to support the achievement of Kakamega social development goals. The growth of the Counties technological infrastructure which include mobile, Internet, and thus MFS, is at the root of the increase in financial inclusion. MFS is part of the toolkit needed to help the poor avoid the worst outcomes. Mobile services promote county government by improving services to users and improve transparency by moving cash from a gray to a white economy. In essence, MFS helps move the town of Kakamega economy up the value chain and address persistent socio-economic inequalities, with the goal of turning the town into a strong, developed and united county. It concluded that the characteristics of users determine their decisions on use of MFS.

From the findings, the study concluded that the benefits of MFS services depend on the characteristics of MFS operators and the level of penetration into the market. It is evident that more operators in the town are young people of age 20 – 30 years who reap the benefits of the service. The study concluded that MFS have increased economic growth in Kakamega since it has fueled entrepreneurship and new business creation among young people who could have been unemployed in the town. The study concluded that MFS-driven financial inclusion has helped to foster awareness of financial issues among the poor in Kakamega town. MFS help the unbanked take the first steps toward the use of financial services, leveraging their existing relationships with telecom companies.

Kakamega's poor are vulnerable to financial shocks, which can lead families to withdraw their children from school or to fail to obtain medical care when necessary. Even minor fluctuations in income drastically increase the poverty headcount. With increased use of MFS in the town, the most vulnerable MFS operators in the town would have access to savings products, which would create a buffer in case of emergencies. Mobile financial services lower some of the key barriers to banking inclusion by reducing start-up costs and service prices, as well as by delivering the banking products that meet the particular needs of users. Operators perceived MFS as widespread network coverage which allows for around-the-clock account access and eliminates travel time and costs.

5.3 Recommendations for Policy and Future Research

This study has unveiled important information regarding the factors contributing to mobile financial services use by business operators. It is recommended that the management of MFS providers re-evaluate their mobile financial services and embark on a fact finding mission to find out from their operators the services which they would like to have access to via mobiles, so that whatever solutions they come up with will be more enticing to users and encourage them to sign up.

It is recommended that service providers address the contributions highlighted so as to give operators and users (customers) a worthwhile experience when taking up MFS because the benefits of MFS are yet to be fully explored beyond convenience.

Lack of awareness is one of the factors that influenced use and adoption of MFS according to this study. The study therefore recommends that more marketing efforts should be made in order to increase awareness of the mobile services. Most of the respondents said they do not have enough knowledge on certain mobile services even in some cases were not even aware of it.

It is recommended that there is need to amend the existing laws and enact the pending bills to ensure full regulation of mobile financial services. The collaboration efforts between CBK and CCK must be strengthened to ensure adequate regulation of mobile financial services in Kenya.

Since this study was done in Kakamega town only, it is difficult to generalize the findings to other Counties in Kenya and also data was not enough for policy development. Studies should be done about the factors contributing to mobile financial services use amongst business operators in other Counties in order to generalize the findings and collect enough data that can be used to develop policies.

BIBLIOGRAPHY

- Abraham, R. (2007). Mobile Phones and Economic Development: Evidence from the Fishing Industry in India. *In Information Technologies and International Development: 5-17*. Mumbai: MIT Press.
- Aker, J. C., and Mbiti, I. M. (2010). Mobile Phones and Economic Development in Africa. *Center for Global Development Working Paper*.
- Aker, J. C., and Mbiti, I. M. (2010). Mobile Phones and Economic Development in Africa. *Center for Global Development Working Paper*. 36 (5).
- Babbie, J. (2001). *A Stitch in Time: Lean Retailing and the Transformation of Manufacturing—Lessons from the Apparel and Textile Industries*. Oxford University Press: New York.
- Baiye, E. (2012). *New Products, New Profits*, New York, American Management Association. MR (N).
- Bandura, A. (1977). *Social Learning Theory*, Englewood Cliffs, New Jersey, Prentice-Hall.
- Bangens, L., and Bjorn, S. (2008). *Mobile Banking Financial Services for the Unbanked*. SPIDER, the Swedish Program for Information and Communication Technology in Developing Regions
- Barnes, S. J., and Corbitt, B. (2003). Mobile banking: concept and potential. *In International journal of mobile communications*, 1(3), 273-288.
- Bordenave, H. (1976). The Information-Integrated Channel: A Study of the U.S. Apparel Industry in Transition. *Brookings Papers on Economic Activity: Microeconomics 1995*: 175-246.
- Boyd, C., and Jacob, K. (2007). *Mobile financial service and the under banked: opportunities and challenges for m-banking and m-payments*. Chicago, IL: The center for financial services innovation.

- Brix, L., and Katharine, M. (2009). *Consumer Protection Regulation in Low-Access Environments: Opportunities to Promote Responsible Finance*. Focus Note 60. Washington, D.C.: CGAP.
- Brown, I., Cajee, Z., Davies, D., and Stroebel, S. (2003). Cell Phone Banking: predictors of South Africa –an exploratory study. *International journal of Information management*, volume 23,issue 5 p382-394.
- CGAP (2006). *Mobile Phone Banking and Low-Income Customers Evidence from South Africa*.
- Cooper, R. B., and Zumd, R. W. (1990). Information Technology Implementation Research: A Technological Diffusion Approach. *Management Science*, 123-139.
- Davis, F. D. (1989). *Perceived usefulness, perceived ease of use, and user acceptance of information technology*. *MIS Quarterly*, 13(3): 319-340.
- Denzin, N. K. (2000). *Handbook of Qualitative Research*. 2nd Edition, Sage Publications Inc., Thousand Oaks Ca.
- Donner, J., and Telleza, C. A. (2008). Mobile banking and economic development: linking adoption, impact, and use. *Asian journal of communication*, 18(4), 318-332.
- Fain, D., and Roberts, M. L. (1997). Technology vs. consumer behaviour: the battle for the financial services customer. *Journal of Direct Marketing*, 11(1), 44-54.
- Foster, M. (2007). *Cell Phones Vital in Developing World*. The Washington Post.
- Gathara, V. (2014). *Linda Jamii A Partnership to Unlock the Value of eHealth*. IT Consultant/Project Management.
- Gathara, V., (2013). *Linda Jamii: A Partnership to Unlock the Value of e-Health*. The Problem of Private Medical Insurance.
- Gehrt, K.C., and Yale, L. J. (1993). The dimensionality of the convenience phenomenon: a qualitative re-examination. *Journal of Business and Psychology*, 8(2), 163-180.

- Heinonen, K. (2004). *Time and Location as Customer Perceived Value Drivers*, Economic Samhalle 124, Swedish School of Economics and Business Administration, Helsinki, Finland.
- Hesse, B. J. (2007). *A Continent Embraces the Cell Phone*. *Current History*, 208- 212.
- IFC (International Finance Corporation), (2013). *Extending Financial Inclusion Integrated savings and loans CBA & M-Pesa launch M-Shwari*, Case Study.
- Im, F., Kim, S., & Han, Z. (2008). The evolution of production models: is a new paradigm emerging? *International Journal of Operations & Production Management*, 19.2: 229-250.
- International Finance Corporation, (2011). *Extending Financial Inclusion Integrated savings and loans*, CBA and M-Pesa launch M-Shwari, IFC Mobile Money Toolkit.
- ITU, (2009). *Information Society Statistical Profiles 2009: Africa*.
- Ivatury, G., and Pickens, M. (2006). *Mobile Phone Banking and Low-Income Customers*. United Nations Foundation. Washington D.C.: Consultative Group to Assist the Poor.
- Jack, R., and Suri, D. (2009). *Women in the Informal Sector: A Global Picture, the Global Movement*. SAIS Review 21.1: 71-82.
- Kuisma, T., Laukkanen, T., and Hiltunen, M. (2007). Mapping the reasons for resistance to Internet banking: a means-end approach. *International Journal of Information Management*, 27(2).
- Kumar, K. P., Shailaja, G., Kavitha, A. and saxena, A. (2006). *Mutual Authentication and Key Agreement for GSM*. *Proceedings of the international conference on mobile business*, P.25. IEEE Computer Society Washington.
- Kwena, R., M., and Turner, J. A. (2013). Extending Pension and Savings Scheme Coverage to the Informal Sector: Kenya's MBO Pension Plan. *International Social Security Review*, Vol. 66, Issue 2, pp. 79-99, 2013.

- Laforet, S., and Li, X. Y. (2005). Consumers' attitudes towards online and mobile banking in China. *International Journal of Bank Marketing*, 23 (5).
- Laudon, K. C., and Laudon, J. P. (2002). *Management Information Systems: Managing the Digital Firm* (7th Ed.). New Jersey: Prentice-Hall, Inc.
- Laukkanen, T. (2007). *Bank Customers' Channel Preferences for Requesting Account Balances*. Proceedings of the 40th Annual Hawaii. International Conference on System Sciences (HICSS'07). IEEE.
- Laukkanen, T., and Lauronen, J. (2005). Consumer value creation in mobile banking services. *International Journal of Mobile Communications*, 3(4), 325-338.
- Lavine, K. (1997). *Mobile Banking Revolution and Its Impact in Financial Deepening*, Unpublished Article.
- Lee, K. S., Lee, H. S., and Kim, S. Y. (2007). Factors influencing the adoption behavior of mobile banking: a South Korean perspective. *Journal of Internet Banking and Commerce*, 12(2).
- Leuthold, F. (1967). Retail on the 'Dole': Parasitic Employers and Women Workers. *NWSA Journal* 13.3: 95-115.
- Luarn, P., and Lin, H. H. (2004). Toward an understanding of the behavioural intention to use mobile banking. *Computer in Human Behaviour*, 21(6), 340-348.
- Lumi, A. (2011). *International Trade and Labor Markets: Theory, Evidence, and Policy Implications*. W.E. Upjohn Institute: Kalamazoo.
- Lyman, T., Gautam, I., and Stefan, S. (2006). *Use of Agents in Branchless Banking for the Poor; Rewards, Risks, and Regulation*. Focus Note 38. Washington, D.C.: CGA
- Mas, I. and Morawczynski, O. (2009). *Designing Mobile Money Services Lessons from M-PESA Innovations: Technology, Governance, Globalization* 2009 4:2, 77-91.
- Mattila, M. (2002). Factors affecting the Adoption of Mobile Banking Services, *Journal of Internet Banking and Commerce* (JIBC).

- Morawczynski, O. and Miscione, G. (2008). *Exploring Trust in M-Banking Transactions: The Case of M-PESA in Kenya*.
- Mugenda, O. M., and Mugenda, A. G. (2003). *Research Methods, Quantitative & Qualitative Approaches*, Acts Press, Nairobi.
- Musonye, R., K. and Turner A., J., (2013). *Extending pension and savings scheme coverage to the informal sector, Kenya's Mbao Pension Plan*.
- Muto, M., and Yamano, T. (2009). *The Impact of Mobile Phone Coverage Expansion on Market Participation: Panel Data Evidence from Uganda*. *World Development*, 37 (12), 1887-1896.
- Nah, F., Siau, K., and Sheng, H. (2005). The Value of Mobile Applications: A Study on a Public Utility Company. *Communications of the ACM*, 48 (2), 85-90.
- Ngechu. M. (2004), *Understanding the research process and methods. An introduction to research methods*. Acts Press, Nairobi.
- Ominde, C., and Hussein, A. (2009). From mass production to flexible/agile production. *International Journal of Operations & Production Management* 17.12: 1183-1195.
- Omondi, D. (2010). Diffusion and Performance of Modular Production in the U.S. Apparel Industry. *Industrial Relations* 35.3: 334-355.
- Palvia, H. (2009). *Global Finance at Risk: The Case for International Regulation*. New York: New Press.
- Pousttchi, K., and Schurig, M. (2004). *Assessment of Today's Mobile Banking Applications from the View of Customer Requirements*. Proceedings of the 37th Hawaii International Conference on System Sciences. Hawaii.
- Rogers, E. M. (1995). *Diffusion of Innovations* (4th Ed.). New York: Free Press.
- Sesay, B. B. (2004). From Guns to Mobile Phones: Calling for Change in Sierra Leone. *Review of African Political Economy*, 31 (99), 128-130.

- Sill, V. (1958). *Managing the World Economy under the Bretton Woods System: An Overview*. In *Managing the World Economy: Fifty Years After Bretton Woods*. Washington.
- Singh, A. M. (2004). *Trends in South African internet banking*. *Aslib Proceedings: New Information Perspectives*, 56(3), 187-96.
- Smith, S. (2012). Long swings and stages of capitalism. In *Social Structures of Accumulation: The Political Economy of Growth and Crisis*, edited by David M. Kotz, Terrence McDonough, and Michael Reich.
- Soroor, J. (2006). Models for Financial Services Firms in Developing Countries Based upon Mobile Commerce. *International Journal of Electronic Finance*, 1(2), 260-274, inderscience Publishers.
- Teo, T. S. H., and Pok, S. H. (2003). *Adoption of WAP-enabled Mobile Phones among Internet Users*. *Omega*, 31(6), 483-498.
- Trappey, C. V., and Trappey, A. J. C. (2001). *Electronic commerce in Greater China*. *Industrial Management and Data Systems*, 101(5), 201-220.
- USAID (2014). *Promoting the Use of Mobile Money to Strengthen Health Systems: Applications in Health Care Financing*.
- Vaidya, L. (2011). *Network Models of the Diffusion of Innovations, Computational and Mathematical Organizational Theory*, Volume 2, Issue 2, pp 163-164.
- Waverman, L., Meschi, M., and Fuss, M. (2005). *The Impact of Telecoms on Economic Growth in Developing Countries*. 3.
- Wu and Wangu, (2005). *The Organization of Buyer-Driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks*. In *Commodity Chains and Global Capitalism*, edited by Gary Gereffi and Miguel Korzeniewicz. Greenwood: Westport.
- Yurong, O. (2004). Team Incentives and Worker Heterogeneity: An Empirical Analysis of the Impact of Teams on Productivity and Participation. *Journal of Political Economy* 111.31: 465-497.

Zelizer, V. A. (1994). *The social meaning of money*. New York: Basic Books.

Annex 1

Questionnaire for MFS Operators

I am a student of the University of Nairobi and I am carrying out a research project to find out the factors contributing to the use of mobile financial services amongst business operators in Kakamega town. I am using various blocks in Kakamega town and you have been chosen to participate in this study. I kindly request you to assist me in carrying out this study by filling out all the fields provided as per the instructions.

All information provided in this interview schedule will be treated as **private and confidential** and will **only be used solely for the purpose of carrying out research for the project**.

Thank you for your time and co-operation. Your response is highly appreciated.

Name of the MFS user _____ Place of Interview _____

Date _____

SECTION ONE: CHARACTERISTICS OF USERS

1. User's gender? Male Female
2. What is your age category?
Below 29 years 30 to 39 years 40 to 49 years
Above 50 years
3. What level of education did you attain?
None Lower Primary Upper primary Secondary
Tertiary (Diploma and above)
4. What is your marital status?
Single Married Divorced Separated
5. What area in Kakamega town do you work? _____
6. What is your place of residence? _____
7. Have you opened an MFS account?
Yes No
If yes, since when? _____

If no, why _____

SECTION TWO: LEVEL OF AWARENESS

8. Have you heard of the following mobile financial service?

Type of Service	Yes	No	If yes, which agency operates it?	What service do they provide
M-Pesa				
M-Shwari				
Linda Jamii				
Mbao pension plan				

9. Have there been awareness campaigns about mobile financial services in this town?

Yes [] No []

10. How did you become aware of the mobile financial service?

Friends [] Radio [] Road shows [] Newspapers []

Door to door campaigns [] Television [] Leaflets []

Others, specify _____

SECTION THREE: LEVEL OF USE OF MOBILE FINANCIAL SERVICES

11. Did you open an account with any of the above MFS?

Type of Service	If Yes, when did you open the account	Why did you open	If No, why?
M-Pesa			
M-Shwari			
Linda Jamii			
Mbao pension plan			

12. How often do you access your account by use of a mobile phone?

More often [] somewhat often [] Not at all []

Type of Service	More often (Daily)	Often (Weekly)	Not so often (Fortnight)	Rarely (Monthly)
M-Pesa				
M-Shwari				
Linda Jamii				
Mbao pension plan				

13. What benefits and problems (if any) have you been getting from joining the above MFS?

Type of Service	Benefit	Problems
M-Pesa		
M-Shwari		
Linda Jamii		
Mbao pension plan		

14. To what extent do you agree with the following statements about the use of the mobile financial services?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Easy to access my account from anywhere					
Easy to check my balance anytime					
Easy to remit money to other parties					
Charges are lower than those of banks					
Easy to have money with MFS					

15. Have you made efforts to save money with any of the MFS? Yes No

If yes, which MFS? _____

Approximately, how much have you saved? _____

SECTION FOUR: USER PERCEPTION OF THE MFS

16. What is your perception of the mobile financial services?

Positive Negative I don't know

17. To what extent do you agree with the following characteristics about the quality of MFS you use? Specify the MFS _____

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Cost	<input type="checkbox"/>				
Convenience	<input type="checkbox"/>				
Accessibility	<input type="checkbox"/>				
Portability	<input type="checkbox"/>				
Flexibility	<input type="checkbox"/>				

18. To what extent do you agree with the following statements about the characteristics of mobile financial services?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I think the system is easy to use					
I often need support from somebody to be able to use this service					
Most people would learn to use this service very quickly					
I find the service very cumbersome to use					
I needed to learn a lot of things before I could get going with this service					
If the service charges extra I will not consider using it					
Overall I'm satisfied with the service					

Annex 2

Interview Guide for Key Informants

I am a student at the University of Nairobi and am carrying out a research project to find out the factors contributing to the use of mobile financial services amongst business operators in Kakamega town. I am using various blocks in Kakamega town and you have been chosen to participate in this study. I kindly request you to assist me in carrying out this study by filling out all the fields provided as per the instructions.

All information provided in this interview guide will be treated as **private and confidential** and will **only be used solely for the purpose of carrying out research for the project.**

1. What is your age category?

20 - 39 years 30 to 39 years 40 years and above

2. What is your level of education?

Primary Secondary Tertiary

Other (Specify) _____

3. For how long have you been operating in this town?

Less than 3 years 4-6 years More than 7 years

4. How do you finance your business

5. What is the level of awareness of the following MFS in this town?

M-Pesa _____

M-Shwari _____

Linda Jamii _____

Mbao pension plan _____

6. What methods do you think can be used to raise the level of awareness among users on the above MFSs?

7. What are the awareness campaigns used on the following MFS in this town?

M-Pesa _____

M-Shwari _____

Linda Jamii _____

Mbao pension plan _____

8. What are the benefits users get from using the following MFS in this town?

M-Pesa _____

M-Shwari _____

Linda Jamii _____

Mbao pension plan _____

9. How does the level of access influence the adoption of mobile financial service in this town?

10. Does MFS characteristic such as speed, convenience and cost influence the adoption of MFS? Comment on your answer.

11. Do you provide other services apart from M-Pesa, M-Shwari, Linda jamii and Mbao pension plan? If yes, which ones?
