

**FACTORS INFLUENCING ADOPTION OF MOBILE PHONE
FINANCIALSERVICES BY INFORMAL WOMEN’S SAVINGS GROUPS IN KISUMU
CENTRAL SUB-COUNTY**

BY

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DECLARATION

This research project is my own original work and has not been submitted for the award of a degree in any other university.

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DEDICATION

This research project is dedicated to my daughter Chantelle Laila, my parents Mr and Mrs Ogelo my dear fiancé MrAden Ismail who have been a source of inspiration to me and who have given me consistent support through finances, time ,moral support and encouragement.

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LIST OF ABBREVIATIONS

ASCA-Accumulating Savings and Credit Association

CBA-Commercial Bank of Africa

CCK-Communications Commission of Kenya

FSD-Financial Sector Deepening

GSMA-Global System for Mobile communications Association

ICT-Information Communication Technology

MNO-Mobile Network Operator

MFS-Mobile Phone Financial Services

MMT-Mobile Money Transfer

M-PESA-M stands for Mobile and Pesa stands for Money

ROSCAS-Rotating Savings and Credit Associations

SPSS-Statistical Package for Social sciences

TAM –Technology Acceptance Model

ABSTRACT

Informal finance is a widely accepted phenomenon in Kenya with individuals increasingly joining and participating in informal savings groups. Kisumu has the second highest composition of informal savings groups at 35.1%. The use of informal savings provide both economic and social benefits to its members but also have inefficiencies which can best be reduced through the use of mobile phone technology especially by adopting mobile financial services. The main challenge is the level of adoption of these services in the informal savings groups as well as the realization of their greater effect on the overall performance. The aim of this study was to establish the factors influencing adoption of mobile phone financial services among informal women's savings groups in Kisumu central sub county. The specific objectives of the study were to assess how socio-demographic factors influence adoption of mobile money services among women informal savings groups in Kisumu central sub county, to examine the extent to which perceived usefulness and ease of use of MFS influences its adoption of among informal women's saving groups in Kisumu central sub county, to evaluate the extent to which personal innovativeness influences its adoption and to investigate the influence of perceived risk on the adoption of MFS by informal women's savings groups in Kisumu Central sub county. The study adopted descriptive research design because this design allowed the researcher to collect data from the respondents and make inferences from this information. The target population of this study comprised of all informal women's savings groups in Kisumu Central Sub County. Snowball sampling technique was used to get the required sample of 24 informal women's savings groups and purposive sampling done to select the respondents including the three top officials including the chairperson, treasurer and secretary in each group and two group members randomly sampled in each group thus getting 120 respondents. Primary data was collected using semi structured questionnaires containing both closed and open ended questions to allow variety. To ensure reliability test retest technique was used. The quantitative data was analyzed using descriptive statistics then presented in tables of frequencies and percentages. Findings of the study revealed that perceived usefulness and ease of use as well personal innovativeness had a positive influence on the adoption of MFS due to the ease of language used, it requires minimum mental effort to use the service, the convenience and accessibility of the service to the respondents. Perceived risk had a negative influence on the adoption of MFS with majority fearing loss of funds due to network failures and system malfunctions. The study recommends that mobile network operators to enhance security measures that will protect funds from losses. They should carry out a countrywide campaign to allay fears of security/safety issues regarding mobile financial services. The study also recommends that the government, the relevant policy makers should improve the policies governing the industry and use of ICT in financial services for quality of their services to the informal women savings groups to minimize the problems that they encounter using the service.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Through technological advancement in the mobile telephony industry, the mobile phone is emerging as a key tool to overcome financial exclusion and to bring financial services to the unbanked and under banked populations. According to GSMA,(2012) there are 1.7 billion people who own a mobile phone but without a bank account.This is despite the fact that mobile phone financial services have offered many alternative ways to lower barriers into the financial world.The ever emerging trends in the ICT sector has brought with it innovations in the form of mobile phone financial services which will provide a solution to address this banking services gap. It's hard to imagine a more explosive, transformative, and empowering trend than the growth of the mobile phone sector in Africa. In 1998 there were fewer than 4 million phones on the continent; today there are more than 800 million — a whopping 80 per cent penetration.

There are 7 billion mobile service subscriptions worldwide and this is equivalent to 95.5% of the world's population where the mobile subscriptions in the developed world is rapidly reaching saturation point. The subscription in the developing world stands at 90.2%, but there is still potential for growth, particularly in Africa, which has the lowest mobile penetration worldwide at 69.3%.

The increased use of these devices coupled with the evolution of technologies that enable consumers to conduct financial transactions using their mobile phones has the potential to change how consumers manage their finances as new services and tools emerge. In addition, innovative financial service technologies may help foster financial access and inclusion in the

mainstream financial system for underserved consumers—those who are unbanked or underbanked (Federal Reserve Bank,2011)

According to a report at the World Economic Forum held in Geneva Switzerland, 2011, the use of mobile telephones to deliver basic financial services to the financially excluded represents an unprecedented opportunity. With mobile phones now in the hands of billions including those at even the lowest income levels, the world is poised to bring unprecedented numbers into the formal economy. This means that nearly 68 percent of unbanked mobile users have the opportunity to enjoy financial services which are surprisingly affordable, secure, convenient and accessible. The mobile phone allows users to complete basic payments and remittances via the mobile phone, and gives easier access to savings, credit and insurance products. Jenkins (2008) defined Mobile money as money that can be accessed and used via mobile phones. With an increasingly, widespread use of mobile phones by consumers in the emerging markets, mobile money transfer is not just a fad but a great phenomenon.

In the United States of America, the number of mobile financial services users exceed 2.5 billion (Giliani, 2010).These services have been embedded positively in the US and has formed a platform to build on with 35% of payments at retailers ,stores, groceries and gas stations had been paid for using Mobile Financial services (Scarborough,2008). The Philippines was among the first countries in which the mobile financial services was introduced and as at the end of 2008, more than 7.5 million subscribers were in the Smart Money system.Since the 1990s, mobile phones have proliferated at an astonishing rate in developingcountries. South Asia and sub-Saharan Africa, two of the poorest and remotest regions of theworld, have been catching up rapidly in mobile access (Pigato, 2001). India is the fastest growingmarket with nearly 6 million additional mobile phone subscriptions per month (Rai, 2006).

Mobile Value-Added Services have been launched in South Africa, Nigeria, Ghana, Tanzania, Uganda and Kenya enable and support agriculture, banking, education, health care and gender equality. In particular, the emergence of mobile money transfers and mobile banking puts Africa firmly at the forefront of the global Mobile Money industry. According to GSMA Mobile Money for the Unbanked (2013) Global Mobile Money Adoption Survey, mobile-money accounts outnumber bank accounts in nine African countries—Cameroon, the Democratic Republic of Congo, Gabon, Kenya, Madagascar, Tanzania, Uganda, Zambia and Zimbabwe. The compelling need to better serve the poor, particularly in sub-Saharan Africa, has driven a lot of mobile phone financial services innovation

Traditional bricks-and-mortar banking infrastructure is too expensive to serve many, particularly in rural areas. However, more than 1 billion underserved people in these markets already have access to a mobile phone, which can provide the infrastructure to offer financial services sustainably, such as payments, transfers, insurance, savings, and credit (Penicaud&Katakam, 2013) According to the latest Fin Access National Survey (2013), more than double the number of adults in Kenya use mobile phone financial services (11.5 million) compared with banks (5.4 million).

Mobile Network operator Safaricom is the telecommunications giant in the East African region and recent trends serve to highlight this fact. Safaricom handles M-pesa transactions worth 121.3 billion a month(Sunday Nation ,2014).This magnitude of transactions could be attributed to the constant sourcing and implementation of new technological innovations using the M-pesa platform such that there are more financial services offered through the use of the mobile phone including cashless payment through *LipanaM-pesa* which has over 32,000 active outlets, *My 1963* which has been the latest innovation introduced to the *matatu* sector in October 2014 ,medical insurance through *Linda Jamii* product in partnership with Britam and *Changamka*, M-banking through partnerships with most financial

institutions in the country, *Mshwari* which is a microfinance product that enables subscribers to access interest bearing savings as well as loans.

The mobile money market in Kenya is dominated by one major player, Safaricom's M-Pesa. Not only did Safaricom launch the first service, in 2007, but it still dominates the field, with an estimated 80% market share of all mobile money transactions in Kenya (CCK, 2013). In essence Safaricom being the telecommunications company with the highest subscription in the country tries to reach out to its subscribers by providing a kind of one stop shop for its members increasing effectiveness in their operations as well as maintaining loyalty by its subscribers.

According to (Kweyu&Ngare, 2014), looking into who is using these services, they found that the groups that may benefit the most from them are currently the least likely to use them. Kweyu and Ngare (2014) also note that relatively fewer rural residents, those below the poverty line, and females use *M-Shwari* and *LipanaM-Pesa* than do their urban, above the poverty line and male counterparts. However, it has been challenging to increase adoption and usage among these groups even when they are already mobile money users.

Mobile money services refer collectively to a set of applications that enable people to use their mobile phones to manipulate their bank accounts, store value in an account linked to their handsets, transfer funds, or even access credit or insurance products (Donner & Tellez, 2008). These financial transactions and services are sometimes referred to as mobile financial services and may or may not be linked directly to a bank account. Mobile money services describe the services that support or enable electronic money transaction such as account access, money transfer, and mobile commerce over a mobile phone.

Women represent nearly two-thirds of the untapped market for mobile growth. Mobile operators aiming to be market leaders in five years time must excel at bringing on new female

subscribers. (GSMA , 2012).Women are significantly more likely to be included into the financial sector through informal groups than men, according to FSDK 2013, where it was discovered that 34.1% of women joined these groups against 20.4% of men, overallly having 10.8% women in informal groups against 4.7% men. Informal savings groups according to CBK, 2014 Report make up 7.8% of the unbanked population in Kenya. These are known as informal because they operate outside the formal systems of banking institutions and are not registered by the government.

Mobile phones have been seen to have the potential to empower women in the process of poverty reduction (Buskens& Webb, 2009).Women in Kenya are finding that there is strength in numbers; if they pool their resources together in self help groups of their own creation, they can radically change their lives and the lives of the families and communities (Maino,2014).The women informal savings groups in Kenya commonly known as *Chamas* or Merry Go rounds take the form of ROSCAs and ASCAs which are more or less similar except the ability of ASCAs to collect money from members and put aside and extend interest bearing loans to its members. Traditionally, these groups use cash as the main method of contribution. The most obvious benefit of using mobile money-based deposits is the elimination of cash. In the traditional savings group model, one person is entrusted to hold all of the group's cash in a locked box, while another member holds the key. Saving the money electronically significantly removes the potential for fraud or theft. "Group funds are commonly considered relatively safer than cash at home, but there are reported cases of fraud," (Goss et al., 2009).

With the innovations of mobile phone financial services, the members now have alternative modes of operation in regards to their cash handling, where they can store their collected funds electronically through their phones, which offer a much safer, convenient and accessible mode with less risks involved. According to Kiite (2012), the benefits of using

mobile money by women far outweigh the challenges in their efforts to fight poverty. But there is still a gap between having an opportunity and actually capitalizing on it. According to GSMA, only a fraction of the estimated and 1.7 billion mobile phone subscribers are active mobile financial services users enjoying the benefits.

The study focused on women informal savings groups in Kisumu Central Sub County, within Kisumu City which is the third largest city in Kenya. Kisumu is situated in the Western region of the country and constitutes the second highest composition of informal savings groups at 35.1% after Eastern Province according to the Fin Access National Survey of 2013. The mobile telephony services have been widely extended with a 56.9% of Mobile financial users in the Nyanza Region.

1.2 Statement of the Problem

The importance of informal finance especially informal savings groups cannot be overemphasized. Women are significantly more likely to be included in the financial sector through informal groups than men. According to FSDK (2013), 34.1% of women joined these groups against 20.4% of men, having 10.8% women in informal groups against 4.7% men. Statistics show that Kenya is the world leader in mobile financial services. Of the 31.31 million mobile subscribers in Kenya, 83 percent are subscribed to mobile financial services (CCK, 2014). These include paying utility bills, school fees, making in-store purchases, m-ticketing, phone top ups, withdrawing cash from ATMs, sending money from 45 countries overseas paying wages and dividends into people's mobile money accounts. This has made the mobile phone financial services an inevitable service for diverse financial transactions in Kenya.

MFS can better meet the needs of women in informal savings groups by providing alternative financial mechanisms and channels that would be far much beneficial to them than

challenging (Kiite , 2012).Given the importance of women informal savings groups in overall financial access and the evidence of how much savings they mobilize, it is appropriate to consider how these services are improved using the mobile phone financial services.

In Kenya today, formal institutions such as the microfinance institutions, insurance companies, businesses, government and NGOs are increasingly using mobile money services for cash disbursement and repayment, cash transfers, procurement and salary payment among others. Various studies (Isanda, 2010) have shown the impact of informal savings groups on improved livelihoods and economic improvement especially in Africa. However, these groups largely are cash based and thus face challenges such as theft and other insecurities attached to cash handling. MFS adoption by the informal women's savings groups is an avenue to increase efficiency in their operations. With the growing trend of mobile money adoption by corporates, there is an emerging need to focus on informal sectors of the economy such as the informal women's savings groups to create efficiency and convenience within their operations. This necessity has created a research gap that this study sought to fill by investigating the factors influencing adoption of mobile financial services among informal women savings groups for which there has been very limited focus on in the previous studies. This therefore necessitated an investigation into the factors that influence the adoption of these services by the informal women's savings groups.

1.3 Purpose of Study

The purpose of this study was to examine the factors that influence the adoption of mobile phone financial services by informal women savings groups in Kisumu Central Sub County.

1.4 Objectives of the Study

- i. To assess how socio demographic factors influence the adoption of mobile phone financial services by informal women savings groups in Kisumu Central Sub County.
- ii. To examine the extent to which perceived usefulness and ease of use of MFS influence the adoption of mobile phone financial services among informal women's savings groups in Kisumu Central Sub County.
- iii. To evaluate the extent to which personal innovativeness influence adoption of MFS among informal women's savings groups in Kisumu Central Sub County.
- iv. To investigate the influence of perceived risk on the adoption of mobile financial services by informal women's savings groups in Kisumu Central Sub County.

1.5 Research Questions

- i. How do socio-demographic factors influence the adoption of mobile financial services among informal women's groups in Kisumu Central Sub County?
- ii. To what extent does perceived usefulness and ease of use influence the adoption of mobile phone financial services among women informal savings groups in Kisumu Central Sub County?
- iii. To what extent does personal innovativeness influences adoption of MFS among informal women's savings groups in Kisumu Central Sub County?
- iv. How does perceived risk in Mobile money services influence its adoption among informal women's savings groups in Kisumu Central Sub County?

1.6 Significance of the Study

The purpose of this study was to analyze the factors that influence the adoption of the mobile phone financial services by informal women's savings groups. The findings will help the

CCK, service providers and other stakeholders to realize the impact of the services offered towards financial inclusion of women as well as recognize the role informal savings groups play in the economic development, thus they will need to cover the gaps left by the study to introduce new and better services for these groups as well as address the challenges they may be facing on the already existing services and make adjustments and improvement. The government may use the findings to provide required policies and regulations and other interventions that are necessary to ensure smooth operations for all women access to financial empowerment. Scholars and researchers may wish to use the findings to carry out further research.

1.7 Basic Assumptions of the Study

The study was based on the assumption that the respondents will answer all questions honestly and to the best of their knowledge and that all the questionnaires will be returned in ample time given to do the data analysis. Also this study assumed that the data provided was useful for the study.

1.8 Limitations of the Study

The limitation that the research found was lack of a definite reference point for the number of informal savings groups that exist as there is no operational framework for government control or involvement in their operations, but from experience and observation a sample was drawn using a chain referral method (snowball sampling) to get the appropriate sample for the study. Another limitation was the difficulty in applying findings to all the informal savings groups in the county which might lead to errors or inaccuracy due to generalizations. This was mitigated by ensuring that the samples were a proportionate representative of the entire target population. Unwillingness of some respondents also would pose as a limitation in the study. This was tackled by ensuring that the researcher properly

introduced herself to the respondents and explained to them the purpose of the study in detail thus building a rapport with them.

1.9 Delimitations of the Study

The study was carried out in one of the major cities in Kenya, Kisumu hence it being a cosmopolitan city, communication to the respondents was easy and because of its diversity in culture and different backgrounds, a high level of representativeness of the sample was achieved. Ease of sampling was advantageous to the study because it was easy to get respondents who belong to more than one informal group hence made referrals to build the required sample size.

1.10 Definition of Significant Terms

Adoption- the act of accepting to use.

Economic ability-affordability of mobile handset and the costs of transactions using mobile financial services

Informal women'ssavings groups- non registered Merry go rounds/chamas

Mobile phone financial services- The use of a mobile phone to access financial services and execute financial transactions. This includes both transactional and non-transactional services, such as viewing financial information on a user's mobile phone. Mobile money, mobile insurance, mobile credit and mobile savings are mobile financial services

Mobile subscriptions- Total number of people who are using the mobile phone network.

Mobile Network Operator - A company that has a government-issued license to provide telecommunications services through mobile devices

Socio demographic factors- age, education, employment status, and income.

1.11 Organization of the Study

Chapter one gave the background of the study and presented the statement of the problem as well as objectives of the study. Chapter two presented the literature review. It further discussed the theoretical literature and presented the conceptual framework of the study. Chapter three presented the research methodology and the model that was used to examine the factors influencing the adoption of the mobile phone financial services by informal women's savings groups in Kisumu Sub County.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

On average women represent 50% of a given nation's populace, yet in most developing countries they represent far less than 50% of a nation's intellectual capital, skilled labor pool and economic contribution (Leahy et al., 2002). The ultimate solution to improving the status of women in the world involves a holistic approach, including economic, educational and political empowerment. The focus of this study was on the factors that influence the adoption and eventual use of mobile financial services by women in their informal savings groups which facilitate their pursuit into the formal financial circuit and financial empowerment.

The chapter provides a framework with which the findings will be contextualized. The literature review was presented in terms of related literature, theoretical review as well as empirical review. Here the factors that influence the adoption of mobile phone financial services are discussed in detail; gaps identified in the literature review are discussed followed by a conceptual framework to show how the variables interact. Then a summary of the literature review will wound up the chapter.

2.2 Adoption of Mobile Financial Services

The term "mobile financial services" encompasses a broad range of financial activities that consumers engage in or access using their mobile phones. MFS can be divided into two distinct categories: mobile banking (m-banking) and mobile payments (m-payments) (Boyd & Jacob, 2007). Mobile banking is defined as "a channel whereby the customer interacts with a bank via a mobile device, such as a mobile phone or personal digital assistant (PDA)" (Barnes & Corbitt, 2003). Mobile payments on the other hand are defined 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 (Niina&Mallat, 2006). The terms “mobile banking” and “mobile payments” describe distinct but in some cases overlapping sets of products. Some m-banking platforms provide services, such as money transfers, that are considered forms of mobile payment, while some m-payments products are so closely linked to bank accounts as the source of funds that they assume m-banking functions (Boyd & Jacob, 2007).

Despite the rapid growth in mobile telephony in low and middle-income countries in recent years, women are 21% less likely than men to own a mobile phone. This has given rise to a mobile phone 'gender gap', where there are 300 million fewer female mobile subscribers than male subscribers in low to middle income countries. As a result, women are less likely to reap the benefits of using mobile phones, such as gain economic opportunities and to empower themselves at the household level, community level and beyond (GSMA,2013). The enthusiasm for mobile technology is tempered by concerns that women may have limited access and literacy with mobile devices, creating a gap in their access to financial services that are delivered this way (Grameen Foundation, 2012)

Mobile phones have been seen to be potentially useful in empowering women in the process of poverty reduction (Buskens&Webb, 2009). However inequalities in society and in the informal sector often constrain the potential for development and growth. Adoption of M-PESA is more widespread among men than women, although the difference is not large (Fin Access Survey, 2009).The burgeoning growth in the last decade has made the mobile phone as indispensable as the wallet. Many willnot leave home without it. The ubiquitous nature of mobile communications has the potential to vastly improve and transform access to financial and transaction services for people, including the developing economies. According to USAID (2011), two industries that have seen phenomenal growth and impact in

developing countries in recent years are mobile communications and microfinance. Both are acknowledged today as major catalysts for economic growth and social development, bringing opportunities that did not exist before to urban and rural populations. In the case of mobile telephony, operators are experiencing adoption rates that far exceed expectations, given the levels of literacy and technological sophistication in emerging markets.

The market leader in the use of mobile money is Kenya. When mobile network operator (MNO) Safaricom launched M-Pesa in 2007, it reached its first year subscriber targets in just two months, and growth has continued apace ever since. The reasons for M-Pesa's success have been studied extensively, and observers generally agree on several contributing factors: a large underserved population with few alternatives for financial services; a demographic profile that saw significant numbers of adults migrate to cities like Nairobi in search of work, while retaining strong familial and financial links to their home villages; a trusted mobile network operator with significant market share and a broad agent network, relatively high mobile phone penetration at the time; and a regulator willing to take a "watch and learn" approach to the new service. Currently the mobile money market in Kenya is dominated by one major player, Safaricom's M-Pesa. Not only did Safaricom launch the first service, in 2007, but it still dominates the field, with an estimated 99% market share of all mobile money transactions in Kenya.

In the last five years, mobile network operators have established themselves as a central player in the Kenya financial landscape and the impact on the financial landscape profound (Tyler & Ravi, 2012). Not only has mobile money proved to be a cost-effective and convenient way for the poor to access and transfer funds, but its users also view and utilize their mobile phones as saving vehicles. In the end, the innovation of mobile money offers a new, convenient financial service that has transformed the savings landscape in Kenya. Initially, financial institutions viewed the rise of mobile money as a threat, but as these services

solidified themselves in the financial landscape, savings providers are increasingly adapting to link and leverage mobile money services with their financial products. Aker and Mbiti, (2010) observed that the rapid adoption of mobile phones in some of the poorest countries in the world has far exceeded expectations. In 1999, for example, the Kenya-based service provider Safaricom projected that the mobile phone market in Kenya would reach 3 million subscribers by 2020. Safaricom alone currently has over 21million subscribers (Safaricom, 2014).

The attitude of customers decides on how demand will emerge for a new product or service. The attitude in turn depends upon many economic, social, cultural and climatic factors. The decisions are also influenced by education, stage of economic development, lifestyle, information and many more other factors. Based on Au and Kauffman (2008) observation, customers can choose to adopt a particular product or service perceived to offer such advantages as ease of use, perceived usefulness, relative advantages of these products over those already being used and many more. In addition to these factors, various consumer demographic factors also have an effect on the adoption of new products and services. Age and education have a major influence on the use of certain products and services especially those that involve technology (Suoranta,2003). Mobile device attributes like tiny displays, slow data connectivity ,weak usability and associated transaction costs have been listed as inhibitors of mobile banking services as well as trust have been also been identified as the other dimensions on the adoption of mobile financial services (Tirok,2012).

The first mobile phone adopters were primarily male, educated, young, wealthy and urban populations. This is because the initial costs of handsets and services were relatively high. But secondary adopters span the geographic spectrum, young and old, rich and poor, urban

and rural. By 2009, mobile phone ownership included more poor, elderly and rural individuals, in part facilitated by the introduction of lower priced handsets and lower denomination airtime cards (Aker & Mbiti, 2010).

M-money is an emerging facet of electronic banking that, unlike traditional financial services, which offer very limited functions, is a potential platform for automated banking and other financial services. It is a wireless service delivery channel that offers additional value for customers by providing “anytime, anywhere” access to financial services (Lee & Chung, 2009). Several studies have examined the attitude and/or intention to adopt M-money services in different countries. Daudet al. (2011) examined the critical success factors influencing the adoption of M-money in Malaysia using technology acceptance model (TAM). The authors found that perceived usefulness, perceived credibility and awareness have significant effect on user’s attitude and subsequently influence the intention toward using M-money.

A similar study was conducted by Cheah et al. (2011), and found that factors such as perceived usefulness, perceived ease of use, relative advantage and personal innovativeness were positively related to the intention to adopt M-money. In the same context Riquelme and Rios (2010) found that usefulness, social norms and social risk, are the factors that influence the intention to adopt M-money in Singapore. Similarly, Bankole et al. (2011) investigated M-money adoption in Nigeria. The authors used both questionnaires and interviews for data collection. Their results showed that culture is the most important factor influencing M-money adoption behaviour in Nigeria. In another context, Suoranta (2003) examined M-money adoption in Finland and found that relative advantage, compatibility, communication and trialability are the most important factors in explaining consumers’ behaviour. Similarly, Wessels and Drennan (2010) studied M-money adoption in the Australian context, they found that perceived usefulness, perceived risk, cost and compatibility are affecting consumer acceptance of M-money. Lee et al. (2007) examined the factors that influence adoption of M-

money in South Korea using TAM. The authors found that the financial-performance risk dimension is the most salient concern for this sample and its context.

Similarly, Guet al. (2009) explored the adoption of M-money in South Korea, based on TAM model. The study found that self-efficacy was the strongest antecedent of perceived ease-of-use, which directly and indirectly affected behavioural intention through perceived usefulness in M-money. In addition, perceived monetary value has a significant effect on perceived usefulness, inferring MFS is not only useful for a firm, but also is useful from a time and monetary value standpoint. Personal innovativeness significantly influences perceived ease-of-use, so innovative users can take advantage of MFS more frequently. Absorptive capacity also directly affects usage intention. Finally, perceived task technology, versus a task characteristic view, significantly influences perceived usefulness.

Furthermore, Brown et al. (2003) investigated the predictors of M-money adoption in South Africa. Factors identified included relative advantage, trialability, and consumer banking needs, with perceived risk having a major negative influence. On the other hand, Cruz et al. (2010) examined the adoption of M-money in Brazil. Perception of cost, risk, low perceived relative advantage and complexity were revealed to be the main reasons behind the use of the service. In another context, Koenig-Lewis et al. (2010) investigated the factors that influence Mobile money adoption in Germany using TAM. The results of the study indicated that compatibility, perceived usefulness, and risk are significant indicators for the adoption of M-money services in Germany.

Closer home, studies by Aziz et al. (2012) investigating on mobile money acceptance in Somalia, found that Perceived usefulness, social influence and security have a significant positive influence on the adoption of Mobile money in Somalia. Oluoch (2012) also found that Perceived usefulness was the most influential factor towards adoption of Mobile banking

whereas Perceived Risk had the most negative relationship towards adoption of Mobile banking.

The above studies are based on different models including theory of reasoned action (TRA), theory of planned behaviour (TPB), decomposed theory of planned behaviour (DTPB), innovations diffusion theory (IDT) and technology acceptance model (TAM), among others. From the above models, TAM has been chosen mainly because its basis represents an important theoretical contribution towards the understanding of mobile money acceptance and behaviour (Malhotra & Galletta, 1999). TAM developed by Davis (1989) postulates that perceived ease of use has a positive influence on perceived usefulness. Furthermore, perceived usefulness and perceived ease of use have a positive influence on attitude. In addition, perceived usefulness and attitude both have a positive influence on the behavioural intention. In addition, the model was upgraded by including three variables, namely, perceived security (Azadavaret al., 2011; Amin & Ramayah, 2010), perceived risk (Brown et al., 2003; Koenig-Lewis et al., 2010) and social influence (Echchabi & Olaniyi, 2012) which are documented to have a positive influence on attitude and behavioural intention respectively.

2.3 Informal Savings Groups and Women's Involvement

Data from the World Bank's Global Financial Inclusion database highlights the existence of significant gender gaps in ownership of accounts and usage of savings and credit products (Demirguc-Kunt, Klapper & Singer, 2013), hence women are less included in the formal financial sector than men, especially in developing economies, even after controlling for individual characteristics like income, education, and age. Globally, 47 percent of women own an account compared to 55 percent of men, and the gender gap is more pronounced in developing countries. Women are 15 percent less likely than men to have a bank account, and

lag behind men in saving and borrowing through formal financial institutions (Women and Finance Project Report to the G20, 2012).

Gross inequalities exist between men and women in Kenya. These gaps and inequalities are evident in access and control of resources, economic opportunities and power, and political voice. For example, an estimated 95% of all land holdings in Kenya are owned by men; while women own only 5% (UNDP & UNIFEM, 2005). These challenges have translated into high levels of poverty, mainly concentrated among women in rural areas. According to the Central Bureau of Statistics, Nyanza Province of Kenya is one of the poorest regions of the country. Gender plays a particular important role as women are much more financially excluded than men (Frinkestein, 2013). On the African continent, characterized by a low level of financial inclusion overall, the lack of access to financial services for women is acute when compared to that of men.

An informal Savings group is a social organization consisting of group members who come together to save money for a specific course. Although over 70% of people in emerging markets do not have a formal bank account (Goss, Mas, Radcliffe, & Stark, 2011), an increasing number are participating in informal savings groups. These informal savings groups are usually composed of persons who have close social relations in one way or another and are widely dominated by women. Data from both the Western rural and Nairobi indicate that ROSCA members were more likely to be women (Anderson et al. 2004; Gugerty, 2007). Similarly, Johnson (2004) found that in Central Kenya, 66% of women were ROSCA participants compared to 30% of men. This then concludes that there are more women in informal savings groups than their male counterparts.

Informal savings groups have been around almost since the beginning of money and have taken many forms. Most are designed to help people build up lump sums (ASCAs). Some

distribute all their money to individual members by turn at regular meetings (ROSCAs); others, like burial funds, pay out at particular times according to rules set by the group (Welfare Groups); and many allow members to save within the group, and let members borrow occasionally when they need to (Rippey,2014). Many financial inclusion programs emphasize expansion of formal services. However, experience in Kenya and Rwanda reveals the importance of informal providers – such as accumulating or rotating savings and credit associations (ASCAs and ROSCAs) – to reaching very poor and remote clientele, as well as ensuring access to a variety of services for many consumers.(KPMG,2012).These informal savings groups are usually consisted of persons who have close social relations in one way or another and are widely dominated by women. Informal savings groups are not a recent practice as they have been widespread over several centuries. According to Rutherford (2000) they emerged in Japan as early as in the 5th Century. The practice could then be traced in the Nigerian country among the Yoruba community in the 16th Century (Seibel, 2000) to late 20th Century among Taiwanese Officers (Besley&Levenson, 1993). 58% of the users of informal groups were women, (Fin Access Survey, 2006).

Despite exclusion from what we consider formal banking, many of the “unbanked” have figured out their own ways to save money. Although over 70% of people in emerging markets do not have a formal bank account (Goss, Mas, Radcliffe, & Stark, 2011), an increasing number are participating in informal savings groups. According to Invested Development (2012)an informal savings group is a social organization formed to help community members save money for specific purposes (either at the individual or community level). The two most common examples are Rotating Savings and Credit Associations (ROSCAs) or Accumulated Savings and Credit Associations (ASCAs). ROSCAs function by taking monthly deposits from each member of a group and then giving the whole monthly sum to one member of the group.

According to FSD Kenya(2009), Informal groups were classified under the following five types: Welfare/clan group (WCG); ROSCAs; Individual ASCAs; managed ASCAs; and investment clubs. Welfare/Clan Groups do not intermediate funds but provide financial support for members and their next of kin in the case of illness, death etc. Rotating Savings and Credit Associations (ROSCAs) and Accumulating Savings and Credit Associations (ASCAs) facilitate saving and lending within groups. In a ROSCA group meeting savings are collected, the whole pot is then immediately given to one member who has not yet received the pot. In the case of an ASCAs, instead of allocating the pot to someone, funds are lent to willing borrowers with interest. The interest paid on the loans will then accumulate in the group fund. Investment clubs are more recent phenomena. People come together to form a group in order to invest in property or business. Several investment groups also invest in the stock market. ROSCAs and ASCAs are similar to each other in the sense that they are both voluntary and independent groups with their own rules and no outside organisation has control over them.

The central difference between ASCAs and ROSCAs is that each time a ROSCA group meets and savings are collected, the whole pot is then immediately in the same meeting redistributed to one or several members of the groups. ASCAs do not give the funds to anyone, but lend the funds to willing borrowers with interest. The interest paid on the loans will then accumulate in the group fund. At the end of the year ASCA members often divide part of the profits (from interest payment) to the members.Regarding the extent of use, the fact that 53% of adult Kenyans belong to at least one informal financial group, and that for 35% of the population informal groups are the only financial service that they have access to demonstrates the overall importance of informal group membership. Regarding the extent of use, FSD Kenya (2009) deduces the fact that 53% of adult Kenyans belong to at least one informal financial group, and that for 35% of the population informal groups are the only

financial service that they have access to demonstrates the overall importance of informal group membership.

Groups have different names and missions across countries. In South Africa, for example, you'll find *makgotlas* for funeral expenses or *stokvels* for group purchasing or community entertainment. In Kenya, you'll often find groups designed to save for a large investment that benefits the community, usually investing in a business or the Nairobi Stock Exchange. Regardless of the name or purpose, most groups have a similar structure and protocol. Members are required to make a small monthly contribution to the community fund. Groups usually have 15-20 members and are governed by a strict set of rules, either written or unwritten, depending on the group's literacy. Breaking the rules is considered "taboo" and comes with social repercussions and possible financial penalties. According to FinMark Trust's FinScope survey, there were roughly 37 million people participating in some kind of informal savings group in East Africa as of 2009. In West Africa, Nigeria alone had nearly 41 million people participating in such groups (Napier, 2009). The value these individuals gain from participation in a savings group includes both tangible economic benefits as well as intangible social benefits.

The Benefits of informal savings groups according to Invested Development (2012) are divided into economic benefits and social Benefits. The economic benefits include the reduced pressures on free cash and enabling access to funds for unexpected life events. The social benefits include the discipline of savings, providing an enjoyable way to save as well as strengthening their social networks while within the group.

Johnson (2004) demonstrates why ROSCAs are used mainly by women. She shows that women's income streams in Central Kenya are smaller than those of men but constant. Men received bigger, but less regular lump sums. Thus women's income streams were better

suitable for saving in ROSCAs. Another explanation why men were not able to make use of the ROSCA device was the fact that they were responsible for buying agricultural inputs and school fees. Inputs and school fees have to be paid at certain times of the year. ROSCAs were not very useful for these purposes because members can get their pots anytime of the year and not necessarily when they need it. The last reason why women use ROSCAs more than men are the informal sanctions that are used against non-performers. Both the interviewed men and women claim that the informal sanctions of naming and shaming or visiting the members homestead if he/she has not paid, are much more effective towards women than men (Johnson, 2004).

Johnson(2004) also emphasizes the social importance of groups for women. She quotes a Kikuyu man: 'To a woman a gitati (group) is her lifestyle, it's her way of life... a woman is not woman until she is in a gitati'. In a group young women also get advice from older women. Thus both in terms of identity and more practical issues the group makes a woman into a woman (Johnson 2004). In geographical terms, more rural people belong to ROSCAs (28.9%) compared to urban people (19.9%). The highest proportions using them are in Nyanza, Central, Eastern and Western provinces of Kenya (FSD,2006).

Successful financial models, according to Goss, Mas, Radcliffe, and Stark (2011) are convenient, trustworthy, and affordable. They are affordable because there is no transaction cost to participate. They are relatively convenient, as groups tend to be local and meetings are scheduled in advance. In addition, due to their community-style formation, they are founded on trust. Despite their success and intrinsic benefits, there are a number of problems that are starting to emerge as the nature of communities evolves. In particular, there are three key issues in the areas of trust-issue of lack of independent record keeping, inconvenience-in terms of the need for consistent proximity and regular meetings which may not always be feasible and convenient , and security risk involved with the way in which savings are done

and how cash is handled is considered to portray a high security risk because the cash can be stolen, misplaced or lost .

Findings by a previous research by Global mobile money adoption survey, 2013,women make up 50% of the potential mobile financial services customer base hence MNOs just cannot ignore women. However penetration is low among women and there are many barriers that keep women from adopting and use of these services due to various factors such as low levels of literacy, poor mobile phone ownership among many other factors.

Injecting the benefits of mobile financial services, increased communication, and innovative apps into the savings group model can displace the inefficiencies that exist in trust, convenience, and security. Importantly, mobile technology does not compromise the intrinsic benefits of the savings groups according to Investment Development (2012).This then leaves a gap to enable us study the factors that influence the adoption and eventual consistent use of mobile financial services by women's informal savings groups.

Mobile phones have been seen to be potentially useful in empowering women in the process ofpoverty reduction (Buskens& Webb, 2009). However inequalities in society and in the informal sector often constrain the potential for development and growth. Adoption of M-PESA is more widespread among men than women, although the difference is not large (Fin Access Survey, 2009).Women have specific wants and needs for financial services, which are reliability, convenience, security and privacy and they will use and value MFS that meet these needs. Men often share these values but they are more pronounced for women given their tremendous responsibility in the household. Failure to demonstrate the ability to meet these wants and needs may be enough to prevent a woman from trying a new tool. Women can't afford to take risks with so much responsibility resting on their shoulders (GSMA mWomenProgramme Report, 2012). In 2012, a study by Bankable Frontiers Associates for

the GSMA's m Women program shed some light on women's financial inclusion issues that are relevant for mobile money. Here's what we know about women according to the study:

Women are multitasking money managers. They are often in charge of very large numbers of small, regular transactions like shopping, receiving remittances, paying bills, and school expenses.

Women are really stretched for time. Because they have so many different jobs within and outside of the household, making all these payments is a real hassle.

Women are more likely to have erratic income sources. They tend to work more frequently in the informal sector where income comes in fits and starts — although they are also receivers of remittances and payments from government agencies, which can be more regular.

Women are conservative. They do not want to take risks with the family's money, and trust is their number one concern in choosing a provider. They prefer cash and informal systems such as savings groups.

Women are loyal evangelists. If they trust the source, winning women over to mobile money can create ripple effects throughout the community. Women value four things when it comes to financial services: convenience, reliability, security, and privacy. Mobile financial services have the potential to deliver on all four fronts. Savings are an integral component of financial inclusion – it not only helps people lower the risks posed by events like medical emergencies or crop failures, but also lets women manage their own resources and take the giant leap from reacting to planning.

This study therefore seeks to explore how women in informal savings groups embrace mobile phone financial services in their operations and the factors which may drive or hinder their adoption of these services.

2.4 Factors Influencing Adoption of Mobile Financial Services

In recent years profound technological changes among which is the advent of ecommerce or the exchange of products and services and payments through telecommunication systems have been witnessed. This section highlights the factors that influence adoption of mobile financial services as per different studies done and which are more likely to influence the adoption and eventual usage of mobile financial services in women's informal savings groups. These factors will include; socio demographic factors, perceived ease of use and perceived usefulness, personal innovativeness and perceived risk.

2.4.1 Socio Demographic Factors

Demographic characteristics of the user has been shown to influence the acceptance of technologies in a number of studies (Agarwal & Parasad, 1999). According to Rogers (2003), the adopter of a new technology is typically younger, has a good income and appropriate level of education and more reactive to new innovation than the non-adopter. Rogers (2003) also indicates that innovative individuals have positive attitudes, ability to communicate with others and a high level of social participation. This trend has been confirmed by many researchers such as Madden and Savage (2000), Dobbins (2002), Mason and Hacker (2003), Chinn and Fairlie (2004), Choudrie and Dwivedi (2005) and Marchionni & Ritchie (2007) who concluded that adopters are younger, wealthy, usually have a good level of education, and possess more social mobility than those who adopt innovations later.

There is a general consensus among researchers that social demographics play a significant role in determining adoption behaviour of new technology. High income, relatively young age and good education have been singled out as major demographic factors that influence

technology adoption Thus this research sought to examine the influence of the key socio-demographic characteristics which are age, income and educational level.

2.4.1.1 Age

Literature suggests that there is a strong relationship between age and the acceptance of new technologies (Al Somali et al., 2009; Gattiker, 1992; Harrison et al., 1992). The general finding in most studies is that increased age decreases the acceptance of technology. Older customers are found to have negative attitudes towards technology whilst the younger adults are seen to be more interested in using technology and innovation. Age differences have been identified, suggesting that people's needs and preferences follow a life-cycle orientation. Age is argued to be negatively related to technology use and usefulness perceptions, and positively related to perceived difficulty (Venkatesh& Morris,2000).According to Gurreroet al. (2012)attitudinal factors determine technology adoption by younger individuals to a higher extent. On the other, social influence factors are more relevant for older individuals. According to Lemaitre(1997) cited by Guerrero et al. (2012) young individuals between 18 and 35 years old will be the future customers of direct distribution channels, as these people tend to be more open towards newer technologies. Conversely, adult individuals are less interested in online and direct channels, as they manifest stronger desires for social interactions, and are less receptive to use technological innovations.

Harrison and Rainer (1992) suggest that there is a strong relationship between age and the acceptance of innovation where he found that older customers are found to hold more negative attitudes towards new technologies. A study by Barret (1997) found out that generally the younger the customers are, the more comfortable they are utilizing non branch service delivery systems, conversely the older the customers are, the more attached they are to the traditional branch system. From the literature, this study will seek to identify if there

are any differences in the adoption of mobile phone financial services among the younger *visavis* the older members of the informal savings groups.

2.4.1.2 Income

A study by Trocchia and Janda (2000) revealed that income and education tend to be positively related to innovation approval. Older individuals between 26 and 45 years of age are overrepresented in categories of higher income, higher occupational positions and higher educational qualifications (Venkatesh& Morris, 2000). Rogers (2003) showed that demographic attributes play an important role in predicting adoption and that economic status (income) is highly correlated to initial adoption. Rogers, in his theory proposes that new technologies are initially adopted by those who have more resources. Choudrie and Dwivedi (2005) confirmed that the economic status for individuals influences their ability to own and then use a technology. Also, income of users have proved to be a key index in technology adoption. Ahn and Lee (1999) in their study of the determinants of demand for mobile telephone networks, found that the probability of subscribing to the telephone networks was positively correlated with income. Similarly, Madden et al. (2004), while investigating the economic factors influencing the growth of mobile phone services, concluded that higher income and a large user base tend to promote mobile diffusion. Also in a separate empirical study, Andonova (2006) found income to be a major contributing variable to mobile diffusion.

2.4.1.3 Educational Level

Generally individual skills, knowledge and technological ability increase with education. Based on this simple logic, it is expected that level of education increases the acceptance of technologies. Adoption of electronic financial services has also been studied from the perspective of innovation adoption (Black et al., 2001). Burke (2002) suggests that education

is positively related to an individual's level of internet literacy. Various studies (Warrenham & Levy 2002; Scotts 2004) have reported a positive relationship between education and media technology adoption. Wareham and Levy report that education is a steady indicator of wireless phone diffusion because achieving higher education has a positive association with being comfortable with higher technology use (Warrenham & Levy, 2002). Scott (2004) as well reports that educated people used phone more, have a strong intention to use phone in future, and have a more positive attitude towards phones. Based on a study done in Uganda on Mobile Money In Uganda, mobile technologies and m-money services in Uganda are predominantly used by males, those with a secondary education or higher, and those at their prime working age (35-54). Females, senior citizens (55+), and those with no formal education or only primary education, have the least access to m-money services. This study seeks to investigate the extent to which education as a socio-demographic factor will influence the adoption of mobile phone financial services by women in informal savings groups.

2.4.2 Perceived Usefulness and Ease of Use

The original technology acceptance model (TAM) that use to predict user's technology acceptance consists of two constructs mainly; perceived ease of use and Perceived usefulness. Widespread research has provided support that perceived ease of use had a significant effect on usage intention; it is an important forecaster of technology adoption. This study seeks to revalidate such relationships in the perspective of mobile phone financial services offered. Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort (Davis, 1989). In a recent research by (Chitungo & Munongo, 2013) conducted on the adoption of mobile banking services in rural districts of African country Zimbabwe, perceived ease of use had significant effect on users' attitude thus

influenced the intention to adopt. In another research by (Cheahet. al, 2011), perceived ease of use was found positively related with the intention to adopt mobile banking services in the country of Malaysia.

A study performed on the factors influencing the intention to adopt mobile banking services in Kenya, perceived ease of use was one of the significant factors in usage intention (Lule, Omwansa, &Waema, 2012).Ease-of-use being one of the core constructs of TAM (Davis, 1989) has been thoroughly used and tested in various extended models of TAM as well as in models that were based on TAM to understand the adoption of m-banking and m-payments. Hence, ensuring ease of use of the offered service both in terms of technology as well as the financial products being offered would be a very important factor in the adoption of MFS.

Perceived usefulness has been defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989). Perceived usefulness is the primary precursor that determines the behavioral aim to use a computer system (Venkatesh& Davis, 2000). Once the consumers realize the importance of the technology based alternate method of service delivery, the intention to adopt such services would increase. According to (Akturan&Tezcan, 2012), perceived usefulness directly affected attitudes towards mobile banking, and that attitude was the major determinant of mobile banking adoption intention among 435 university students of Turkey. The research conducted by (Amin, Baba, & Muhammad, 2007) on current consumers of mobile banking in Malaysia, perceived usefulness was found to be a significant determinant in the intention to adopt such services. The results of the research performed by (Safeena, Hundewale, &Kamani, 2011) showed that perceived usefulness was the important determinant of mobile banking adoption.

As Davis (1989) noted, future technology acceptance research must address how other variables affect usefulness, ease of use and user acceptance. Therefore, perceived ease of use and perceived usefulness may not fully explain the behavioural intentions of the adoption and eventual use of certain products and services, thus other factors are also considered.

2.4.3 Personal Innovativeness

Personal innovativeness usually is as a key individual characteristic variable of the adoption and diffusion of the innovation and is related to the users' time of adoption of the new information technology. The conceptualization of consumer innovativeness has been used to investigate user behavior in the acceptance of new products and services. Innovative individuals will have higher tendencies in developing positive beliefs on new technology especially when the beliefs are developed through amalgamating of information from various media. Innovative users perceived lower risk and much openminded. The conceptualization of consumer innovativeness has been used to investigate user behavior in the acceptance of new products and services. Personal innovativeness has strong influence in determining technology acceptance in the perspective of internet shopping and Ecommerce (Hung, Ku & Chang, 2003).

Agarwal and Prasad (1998) also found that innovative individuals will have higher tendencies in developing positive beliefs on new technology especially when the beliefs are developed through amalgamating of information from various media. Meanwhile, it can be asserted that innovative users perceived lower risk and much openminded (Lu, Yao & Yu, 2005). The newly emerged mobile services represent an innovation where both intangible service and an innovative medium of service delivery employing high technology are present. Thus, concepts of innovation and diffusion of innovation are even more intricate as technology and service aspects have an effect on the characteristics of mobile services (Mohr, 2001). Even

though these kind of personal characteristics of a consumer have found to be predictors of adoption, an increasing body of research has demonstrated that it is the perceived attributes of innovation itself rather than the personal characteristics that are the stronger predictors of the adoption decision.

2.4.4 Perceived Risk

Perceived risk as defined by (Pavlou, 2001), “It is the user’s subjective expectation of suffering a loss in pursuit of a desired outcome”. The quality of online services offered, the possible risk of illegal activities and fraud has always been a concern for both consumer and service providers (Ba & Pavlou, 2002). Perceived risk is the uncertainty about the outcome of the use of an innovation. The perception of risk among individuals has been proved in technology adoption literature as an important element in acquiring new technology and services.

Riquelme and Rios (2010) further supported that risk factor is a vital element in investigating technology adoption. Wang et al. (2003) define it as the user’s subjective expectation of suffering a loss when pursuing a desired outcome. Wu & Wang (2005) approach perceived risk as a multidimensional construct that covers certain financial, product performance, social, psychological, physical or time risks that can be involved in an online transaction.

According to Dineshwar and Steven (2013), Perceived risk and reliability were found to be the main obstacles to mobile banking usage in the African country of Mauritius. Risk in mobile banking is perceived to be higher than conventional banking because information exchange on wireless infrastructure, which produced inherent doubts among consumers as hacking and other malicious attacks, might cause financial and personal data loss (Yousafzai et al., 2003). Risk is at the centre of all financial transactions. Risk is defined as a consumer’s belief about potential uncertainty (Tobbin, 2009). Customer perceptions of uncertainty in the

areas of finance, performance, privacy and time are barriers to m-banking (Anduset al., 2011; Brown et al., 2003). Risk may have the most significant negative impact if the users do not have prior experience of electronic transactions (Tobbin, 2009). Perceived risk in many studies realize a negative relation to the adoption of technology innovations.

A study conducted by Bankable Frontiers Association for GSMA M-women Programme (2012) found that women have a need for four key attributes in financial tools and services; convenience, reliability, security and privacy. Stretched for time and responsible for a multitude of household responsibilities, women favour easy to use and low risk money management tools. Rutherford (2010) states that Kisumu area of Western Kenya is rich in informal finance mostly using ASCAs and ROSCAs . However, these groups fall short on meeting women's needs for instance, the overreliance on cash by these groups may pose a security risk leading to losses. Conducting transactions only in cash presents financial and personal risks, since there is no recourse when cash is lost or stolen (Federal Reserve Board, 2012).

Women have specific wants and needs for financial services, which are reliability, convenience, security and privacy and they will use and value MFS that meet these needs. Women can't afford to take risks with so much responsibility resting on their shoulders (GSMA mWomen Programme Report, 2012). This study will therefore seek to examine the extent to which perceived risk will influence the adoption of mobile phone financial services by women in informal savings groups in Kisumu Central sub county.

2.5 Theoretical Framework

Previous research focused on the factors influencing the adoption of Mobile money technology or mobile banking service from diverse theoretical approaches such as TAM model, Theory of Reasoned Action (TRA), Theory of Planned Action (TPA), Unified theory

of Acceptance and Use of Technology (UTAUT), Diffusion of Innovations theory, among others. The factors studied in this research were derived from two of the theories above since they relate closely to the study, there is need to explain them and what they entail.

2.5.1 Technology Acceptance Model (TAM)

TAM is one of the most frequently used models formulated as an information systems theory that models how users come to accept and use a technology. This Model is adapted from TRA. The TAM states that a user's adoption of a new information system is determined by that users' intention to use the system, which in turn is determined by that users' beliefs' about the system. The TAM further suggests that two beliefs are instrumental in explaining the variance in users' intentions. These two attitudes labeled most important for accepting a technology namely Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).

PU explains how useful the consumer finds a new technology whereas PEOU indicates how easy he/she finds it. The perceived element of the words is simply recognizing the facts that the actual usefulness or ease of use is a subjective element and in asking consumers we can only know how they perceive something filtered through their epistemic perception of reality. In some ways this is similar to the perceived behavior control in assessing subjective attitudes though it lacks the analysis of the subjects. In other words fears and other emotions or feelings limiting the perception of how the consumer will interact with reality are not taken into account as much. However Davis (1989) noted, future technology acceptance research must address how other variables affect usefulness, ease of use and user acceptance. Therefore the perceived ease of use and perceived usefulness may not fully explain behavioral intentions towards the use of mobile money services, necessitating a search for additional factors that can better predict the acceptance of mobile financial services among women savings groups.

TAM states that PU and PEOU are the main factors determine an individual intention to use a system with the intention to use serving as a mediator of actual system use. As shown in figure 2.1, the current study purposes to extend extends the original TAM model by incorporating two main constructs: socio demographic factors and perceived risk. The four main independent variables (Perceived usefulness “PU”; perceived ease of use “PEOU”; Socio demographic factor; and perceived risk “PR”) directly influence the behavioral intention to adopt and use the Mobile financial services by women in informal savings groups. TAM model was considered most suitable for this study as it has empirical support and well-established constructs to predict intention to use a new technology but is not sufficient hence, there will be need to adopt other theories which include other factors.

2.5.2 Innovation Diffusion Theory (IDT)

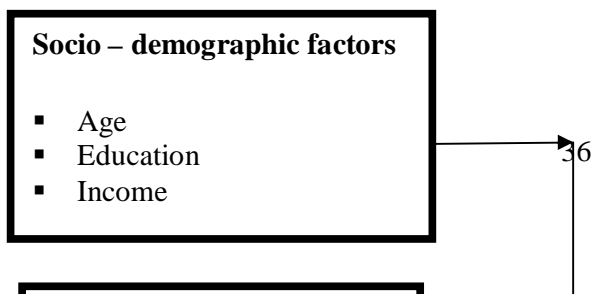
Another theory pertaining to the adoption of new technology is the Innovation Diffusion Theory by Rogers (1983). Innovation is any idea, object or practice that is perceived as new by members of the social system (Ahlstrom,2010). Diffusion of innovation on the other hand is the process by which the innovation is communicated through certain channels over time among members of social systems. This theory has received similar attention by scholars in explaining consumer behavior towards new technology. It is suggested that innovation diffusion is achieved by how a social system accepts and begins to use(adopt) an idea or technology (Ahlstrom,2010).According to Rogers (1983) this theory seeks to explain how new ideas or innovations are adopted, and this theory proposes that there five perceived characteristics of innovation that can be used to form a favorable or unfavorable attitude: relative advantage, compatibility, complexity, trialability and observability. Relative advantage refers to the degree to which an innovation is perceived as being better than the idea it supersedes is said to be a significant factor influencing positive or negative attitude

towards an innovation hence will be investigated on whether it affects adoption of mobile financial services by informal women's groups in Kisumu Central sub county.

Rogers (1983) theory suggests that innovations that have a clear, unambiguous advantage over the previous approach will be more easily adopted and implemented. Rogers (1983) asserts that consumer's adoption of certain tech products is perceived as being better than the practice it supersedes. Therefore, adoption of mobile financial services will depend on consumer's expected gains or losses from the service. However, not all innovations are adopted even if they are good hence it may take a long time for an innovation to be adopted.

2.6 Conceptual Framework

Independent Variables



Dependent Variables

Source: Author, 2015

A conceptual framework diagrammatic explanation of the research problem, hence an explanation among several factors that have been identified important to a study (Ngechu,

2006). This study conceptualized that the factors that enhance the use of Mobile Financial services have a great influence on its adoption by informal women's savings groups. The research study seeks to establish the link between the independent and the dependent variables to establish the nature of their relationship. In this study the Independent Variables consist of the factors that influence adoption of Mobile financial services such as the Socio demographic factors, Perceived Usefulness and Ease Of Use, Personal innovativeness and the Perceived Risk. The Dependent Variable is the Adoption of the Mobile financial services by informal women's savings groups.

2.7 Summary of Gaps in the Literature

From the literature reviewed, there is sufficient evidence to show that more emphasis on mobile technology has been laid upon mobile banking and the factors that affect/influence its adoption. However, Mobile financial services include three major aspects which are; mobile banking, mobile money transfer and mobile payments. This is one gap. Another aspect that has been overlooked through previous research is the role of women in their attempt to involve themselves in participating in informal savings groups and how they use the technological advancement in mobile financial services to better their operations. Therefore, there is a need for a research on factors influencing adoption of mobile financial services by informal women's savings groups in Kisumu Central sub County in order to help mobile network operators understand these factors hence package their financial services into a form that is acceptable to informal savings groups. Since most research studies are based on TRA and TAM theories, which consist of two constructs mainly; perceived ease of use and Perceived usefulness which are not sufficient enough to explain factors influencing adoption

of Mobile financial services, there was need to adopt more theories in this study such as Innovation diffusion theory in order to include more variables such as perceived risk.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the type of research methodology that was applied. It covered the type of research design, sample and sampling procedure method, target population, and sample size. It further presented data collection procedure and analysis and research instruments that the study adopted. It also focused on validity and reliability of instruments and ethical issues that were observed during the study.

3.2 Research Design

Orodho (2003) defines research design as the scheme, outline or plan that is used to generate answers to research problems. A research design can be regarded as an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance with the research purpose. It is the conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). The research adopted a descriptive research design. According to Creswell (2008), a descriptive study is concerned with finding out the what, where and how of a phenomenon. Descriptive research design was chosen because it can enable the researcher to generalize the findings to the larger population. Surveys allow the collection of large amount of data from a sizable population in a highly economical way. It allows one to collect data which can be analyzed quantitatively (describing the data using charts and tables in an executive summary) and inferential statistics (testing then drawing conclusions about the population, based on the sample). Therefore, the descriptive survey was deemed to fulfill the objectives of this study. In this study, data was collected from individual women who belong to informal savings

groups in Kisumu Sub County. The data was collected to study the factors that influence the adoption of Mobile financial services by women in informal savings groups.

3.3 Target Population

A target population is a group of individuals, objects or items from which samples are taken for measurement (Mugenda&Mugenda, 2008). Population refers to an entire group of persons or elements that have at least one thing in common, for instance, women involved in informal savings groups. Target population also refers to the larger group from which the sample is taken and about which information is desired. Kisumu Central Sub County comprises of six wards namely; Railways, Migosi, ShauriMoyo, Market Milimani, Kondele and Nyalenda B. The target population of this study comprised of all members of women informal savings groups in Kisumu Central Sub County. In this study the target population was women participants in informal savings groups in the entire Kisumu Central sub county from which a sample was derived.

3.4 Sample Size and Sampling Procedure

Sampling is the procedure a researcher uses to gather people, places or things to study. It is a process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group (Orodho&Kombo, 2002). A sample is a finite part of a statistical population whose properties are studied to gain information about the whole (Webster, 1985). The study adopted a snowball sampling which is a special non probability method for developing a research sample where existing study subjects recruit future subjects from among their acquaintances. This sampling technique is often used in hidden populations which are difficult for researchers to access or in cases where a sampling frame is hard to establish and

it is assumed that cases are affiliated through links that can be exploited to locate other respondents based on existing ones (Katz,2006).

Researchers use this sampling method if the sample for the study is very rare or is limited to a very small subgroup of the population. After observing the initial subject, the researcher asks for assistance from the subject to help identify people with a similar trait of interest (Coleman, 1958). A snowball sample is one in which the researcher collects data on the few members of the target population he or she can locate, then asks those individuals to provide information needed to locate other members of that population whom they know (Patton, 1990). In 2009 survey of Landsat users in the United States (U.S.) conducted by the USGS Fort Collins Science Center's Social and Economic Analysis (SEA) Branch, snowball sampling provided a way to identify otherwise unknown users of Landsat imagery. The population of Landsat users in the U.S. can be characterized as unknown because there is no list that contains contact information for every user in the U.S. from which to sample hence snowball sampling was deemed most appropriate for this study. A study on discontinuities in m-banking and development policy: a case study of women in Kenya's agricultural sector by Nduta and Diga, (2014) employed the snowball sampling method to make contact with their respondents.

The reason for the choice of this sampling method was because informal women's savings groups as the name suggests are non registered groups and their operations are not controlled by the government hence it was difficult for the researcher to access due to lack of a defined sampling frame. Snowball sampling was suitable to use in this study because of the unregistered status of the informal groups, there are no lists or other obvious sources for locating members of the population. The researcher began with a few participants with whom contact was already made who used their social networks to refer the researcher to other people who could participate in the study until a sizable sample size is achieved.This was

easier to administer because of its low cost as the researcher did not have to invest a lot of money and time in the sampling process, did not require a complex planning and staff used was considerably smaller in comparison to other sampling methods. To minimize biases and increase representativeness in the sample various savings groups with a minimum of fifteen members were chosen within each ward. From the groups identified, the study targeted four groups per ward in the sub county giving a total of 24 groups to allow for generalizability and representativeness and in those groups through purposive sampling the officials (Chairperson, treasurer and secretary) were picked as respondents as well as two other group members who were randomly selected. The sample size therefore gave a total of 120 respondents.

3.5 Data Collection Instrument

Data collection instruments are used to collect the necessary information needed to serve or prove some facts (Mugenda&Mugenda, 2003). A researcher administered questionnaire was used to collect data from the respondents .The use of questionnaires enabled the respondents to remain anonymous and be honest in their responses (Cooper & Schindler, 2003).The choice of the questionnaire was based on the fact that it is simple to administer and analyze the data statistically. It is also a less costly tool to use in research. Further, it is not biased and the responses are gathered in a standardized manner hence they are more objective in their results.The questionnaire comprised of both open ended and closed ended questions and was designed to comprise of two sections. The first part was designed to determine fundamental issues including the demographic characteristics of the respondents, while the second part consisted of questions focusing on the other three variables .The questionnaire was designed in line with the objectives of the study.

3.5.1 Pilot Testing

Pilot Testing is a trial run of procedures and instruments that one plans to use. Pilot testing may prevent costly mistakes and is an important step in the research process because it reveals vague questions and unclear instructions in the instrument (Nachmias&Nachmias,1996).The main purpose of pilot testing was to capture the potential problems before they become costly mistakes during the actual study. The pilot test was conducted among 10 randomly selected women participants of informal savings groups outside the intended study area so as to ensure validity. The questionnaire was administered to the pilot subjects exactly the same way as it would be administered to the main respondents.

3.5.2 Validity of Instrument

Validity is the degree to which an instrument measures what it is supposed to measure (Kothari, 2004). It is the degree to which results obtained from the analysis of the data actually represent the phenomenon under study. The validity was enhanced through appraisal of the tools and verification by the supervisors and subject experts in the department who critically examined the questionnaire, gave their opinions and recommendations in their expertise. Furthermore, the questionnaire was subjected to a pre-test/pilot test among 10 members of informal women's savings groups who were randomly selected.This enabled the researcher to detect any deficiencies in it.

3.5.3 Reliability of Instrument

Mugenda and Mugenda (2003) define reliability as a measure of a research instrument yields consistent results or data after repeated trials. According to Joppe (2000) reliability is the extent to which results are consistent over time. The test retest method was used to assess the

reliability of the data. To test reliability a test re-test method was employed to the same respondents after a period of two weeks to examine the consistency of responses between the two tests in a pilot study on women in informal savings groups outside the study population. A correlation coefficient was calculated to indicate the relationship between the two sets of scores. Cronbach's coefficient of internal consistency was employed to test reliability. This was computed using SPSS version 20 whereby a coefficient of 0.7 and above is accepted (Kothari, 2004). The correlation coefficient obtained was to 0.72 indicating that the two sets of scores were correlated hence the questionnaire was reliable.

3.6 Data Collection Procedures

The researcher obtained the necessary authorization from the University of Nairobi and the National Council of science and Technology the permit to conduct the research. The researcher trained six research assistants who had the necessary proof of completion of secondary education who then proceeded to collect the data. The training included; understanding the questionnaire, the respondent sampling, data collection techniques, data recording and the ethical considerations. The primary data was sourced through administration of questionnaires to 120 respondents drawn from the 24 informal women's savings groups.

3.7 Data Analysis Techniques

Data analysis is a process of inspecting, cleaning, transforming and modeling of data with the goal of highlighting useful information, suggesting conclusions and supporting decision making(Ader,2004).It involves examining, categorizing, tabulating or otherwise recombining the evidence to address the initial propositions of the study (Yin, 1994). In order to analyze data, Mugenda and Mugenda (2003) observed that a researcher needs to have the following information about the statistical data analysis tools namely: descriptive, inferential and test

statistics. Before processing the responses, the completed questionnaires were checked for completeness to ensure consistency. The data was then coded to enable the responses to be grouped into different categories. This was to enhance basic statistical analysis. The data analysis involved quantitative and qualitative methods (numerical and descriptive). Qualitative data was analyzed based on content analysis while quantitative data was analyzed using descriptive statistics. Data was analyzed with the help of electronic spreadsheet SPSS (Statistical Program for Social Sciences) which has analytical tools that reduce the chances of errors. The Likert means, frequencies and percentages were used to present the data.

3.8 Ethical Considerations

The researcher sought clearance to carry out the research by obtaining an introduction letter from the University of Nairobi and further sought a permit letter of research authorization to conduct research from the National Council for Science and Technology and Innovation. The principle of voluntary participation was strictly adhered to and the respondents were not coerced into participating in the research. They were informed about the purpose of the study and treated with respect. The researcher guaranteed the participants confidentiality in the entire research process.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

The purpose of this research was to determine the factors that influence the adoption of mobile financial services among women in informal savings groups/chamas within Kisumu Central Sub-County. Having identified the problem of study in chapter one, reviewed existing literature and shown gaps of knowledge in chapter two, chapter three explained the methods that the study used to collect data. This chapter presents analysis and findings of the study as set out in the research methodology. The results are presented on the factors that influence the adoption of mobile financial services among women in informal savings groups/chamas in Kisumu Central Sub-County. The data was gathered exclusively from questionnaire as the research instrument. The questionnaire was designed in line with the objectives of the study.

4.2 Response Rate

The study administered 120 questionnaires to the officials of the 24 selected informal saving groups/chamas in Kisumu Central Sub-County in collecting data with regard to the factors that influence the adoption of mobile financial services among women in informal savings groups/chamas. The questionnaire return rate results are shown in Table 4.1.

Table 4.1: Response Rate

Response	Frequency	Percentage
Responded	108	90
Not Responded	12	10
Total	120	100

From the study, 108 out of 120 target respondents filled in and returned the questionnaire contributing to a 90% response rate. This commendable response rate was made a reality after the researcher made personal visits to request the respondents to fill in the questionnaires as well as explaining the importance of their participation in this study. This commendable response rate can be attributed to the data collection procedure, where the researcher personally administered questionnaires with the help of well trained research assistants and waited for respondents to fill in the questionnaires and picked the questionnaires once fully filled. The response rate demonstrates a willingness of the respondents to participate in the study. This response rate was excellent and representative and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. The questionnaires that were not returned were due to reasons like, the respondents were not available to fill them in at that time and despite persistent follow ups there were no positive responses from them.

4.3 Respondent's Demographic Characteristics and General Information

4.3.1 Age of the Respondents

Adoption of mobile financial services is about a technological advancement concept which is likely to be easily up taken by different age groups differently. In order to avoid biasness, this study thus had to investigate the composition of the respondent in terms of age brackets to understand their familiarity with this concept. Table 4.2 shows the results of the findings on the age brackets of the respondents.

Table 4.2: Age Brackets of the Respondents

Age Bracket	Frequency	Percentage
18-24 Years	7	6.7
25-30 Years	30	28.3
31-34 Years	36	33.5
35-40 Years	16	14.5
41-44 Years	10	9.3
45-50 Years	6	5.8
Over 51 Years	2	1.9
Total	108	100.0

From Table 4.2, majority of the respondents were aged between 31-34 years comprising of 33.5% of the respondents, 28.3% of the respondents were aged between 25-30 years, 14.5% of the respondents were aged between 35-40 years, 9.3% indicated that they were 41-44 years, 6.7% of the respondents were aged between 18-24 years, 5.8% of them were aged between 45-50 years, while 1.9% were aged over 51 years. The study findings show that majority of the respondents were well distributed in terms of age and that they are active in technological advancements and productivity and hence can contribute constructively in the adoption of mobile financial services.

4.3.2 Level of Education

The customers of mobile financial services possess different academic qualifications. This difference might contribute to differences in the responses given by the respondents. The study, therefore, sought to establish the levels of education attained by the respondents.

Table 4.3: Respondents' Level of Education

Level of Education	Frequency	Percentage
KCPE	3	2.4
KCSE	6	5.6
Certificate	11	10.0
Diploma	61	57.0
Bachelor's Degree	27	25.0
Total	108	100.0

According to the results, 57% of the respondents indicated that they had acquired college diplomas, 25% of the respondents had acquired a Bachelor's or undergraduate degrees level of education, 10% of them indicated that they had acquired college certificates as their highest level of education, 5.6% of the respondents had acquired only KCSE/secondary level of education, while 2.4% of the respondents reiterated that they had attained KCPE/primary school education as their highest level of education.

4.3.3 Nature of Employment

The study further sought to establish the employment status of the women in Chamas in Kisumu Central Sub- County. The results are shown in table 4.4 below.

Table 4.4: Nature of Employment of the Respondents

Nature of Employment	Frequency	Percentage
Employed	38	35.0
Self-Employed	50	46.0
Unemployed	20	19.0
Total	108	100.0

Majority (46%) of the respondents indicated that they were self employed, 35% of the respondents reiterated that they were employed, while 19% of them were not employed.

4.3.4 Level of Income

The customers of mobile financial services receive different income levels. This is mainly according to the nature of the jobs they do. As such, the study sought to find out respondent's level of income per month.

Table 4.5: Respondents' Levels of Income

Income Range (Kshs)	Frequency	Percentage
Less than 10,000	7	7.0
10,000-29,000	7	7.0
30,000-49,000	60	56.0
50,000 and above	34	30.0
Total	108	100.0

From the findings, 56% of the respondents indicated that they earned between Kshs 30000 and 549000, 30% of them indicated that they earned Kshs 50000 and above, 7% of the respondents earned between Kshs 10000 and 29000 as well as another 7% of them who earn less than 20,000 per month. This implies that the respondents who participated in this study enjoy different income levels per month owing to the differing types of jobs they engage in to generate incomes.

4.3.5 Length of Time in Informal Savings Group/Chama

The respondents were required to indicate the length of time they had been in their respective chamas. The results are depicted in Table 4.4.

Table 4.6: Length of Time in Chama

Duration in Years	Frequency	Percentage
0-5 Years	53	49.0
6-10 Years	38	35.0
11-15 Years	12	11.0
Above 15 Years	5	5.0
Total	108	100.0

From the study, 49% of the respondents have been in their chamas for 0 to 5 years, 35% of the respondents indicated that they have been in their chamas for 6 to 10 years, another 11% of them reiterated that they had been in their chamas for 11 to 15 years, while only 5% of the respondents have been in their chamas for a period of above 15 years.

4.3.6 Role in Informal Savings Group/Chama

The study further sought to find out the roles of the respondents in their respective chamas.

The findings are shown in table 4.7.

Table 4.7: Respondents Roles/Positions in Chamas

Role/Position	Frequency	Percentage
Chairman	26	24.6
Treasurer	34	30.8
Secretary	36	33.4
Members	12	11.2
Total	108	100.0

The results shown in table 4.7 indicate that most of the respondents were secretaries as shown by 33.4% of the respondents, 30.8% were treasurers while 24.6% were chairmen. This indicates that respondents played different roles within their informal savings groups/chamas.

4.4 Factors that Influence the Adoption of Mobile Financial Services among Women in Informal Savings Groups/Chamas

4.4.1 Involvement in the Use of Mobile Financial Services

The study sought to establish the extent to which the respondents had been involved in the use mobile financial services in their informal savings groups/chamas as shown in Table 4.8 below

Table 4.8: Extent of Involvement in the Use of Mobile Financial Services by the Chamas

Extent	Frequency	Percentage
To a very great extent	32	30.1
To a great extent	57	53.2
To a moderate extent	14	13.0
To a little extent	3	2.2
To a very little extent	2	1.5
Total	108	100.0

From the study, 53.2% of the respondents indicated that they had been involved in the use mobile financial services in their chamas to a great extent, 30.1% of them indicated that they had been involved in the use mobile financial services to a very great extent, 13.0% of the respondents indicated to a moderate extent, 2.2% of the respondents indicated that they had been involved in the use of mobile financial services to a little extent, while 1.5% of them had been using mobile financial services to a very little extent.

All the respondents (100%) indicated that they owned a mobile phone and use mostly mobile money transfer payments in their groups. All the respondents also knew mobile financial services with most mentioning MPESA, Airtel Money and Orange Money as the mobile

financial services they knew. All the respondents (100%) indicated that they were registered on MPESA which is the leading mobile finance service in Kenya and had used MPESA for a period of over two years to transact businesses in their groups.

The findings above indicate that all the respondents owned a mobile phone, were aware of the mobile financial services offered by different MNOs and were all registered to Mpesa. This means that regardless of the diverse age brackets the respondents belonged to ,their different income levels and their different education achievements they were all very receptive towards mobile phone financial services and were keen to use theses services in their personal as well as group activities. Majority of the respondents were of a youthful age of between 25 years and 44 years of age. This being consistent with the previous studies that age is negatively related to technology use and usefulness perceptions, and positively related to perceived difficulty (Venkatesh& Morris, 2000).

4.4.2 Perceived Usefulness and Ease of use

The study further sought the respondents' level of agreement with various statements on the extent to which the perceived usefulness and ease of use influence the adoption of mobile phone financial services by women chamas. The findings were as shown in table 4.9 below.

Table 4.9: Agreement with Statements on Perceived Usefulness and Ease of Use

Statement	Mean	Standard Deviation
Mobile financial services would enhance my ability to save and invest more.	3.69	1.218
Mobile financial services are useful and would enhance progress in the groups' activities.	4.10	1.083
Mobile financial services are convenient and easily accessible	4.18	0.753
Mobile financial services offer faster transactions, thus time saving.	4.19	0.992
Mobile financial services are affordable	4.25	1.201
Mobile financial services are Easy to use and require minimum mental effort	4.27	0.73
The language used in MFS is easy to understand	4.30	0.948

Perceived usefulness and Ease of Use of MFS was found to have a positive effect on the demand and adoption of MFS which supports the findings of many earlier studies .Perceived Usefulness and Ease-of-use being one of the core constructs of TAM (F. D. Davis, 1989) has been thoroughly used and tested in various extended models of TAM as well as in models that were based on TAM to understand the adoption of mobile financial transactions. Our current study also found ease-of-use of MFS to be a very critical factor influencing its adoption among the informal women savings groups/chamas..Majority of the respondents agreed that the language used in MFS is easy to understand as shown by a mean score of

4.30, MFS's are easy to use and require minimum mental effort as shown by a mean of 4.27, MFS's are affordable as shown by a mean of 4.25, MFS's offer faster transactions thus time saving as shown by a mean of 4.19, MFS's are convenient and easily accessible as shown by a mean of 4.18, MFS's are useful and would enhance progress in the groups' activities as shown by a mean of 4.10 and MFS's would enhance the women's ability to save and invest more as shown by a mean of 3.69.

The results above indicate that mobile financial services in Kenya are useful to customers in making it easier and convenient for them to perform their financial transactions. These findings agree with studies by Chung and Kwon (2009) who demonstrated that the constructs of perceived usefulness and perceived ease of use were positively related to behavioral intention to adopt mobile financial services. Similarly, Lee et al. (2008) reported that perceived usefulness significantly affects consumers' intention to use mobile financial services. Hence, ensuring ease of use of the offered service both in terms of technology as well as the financial products being offered would be a very important factor in the adoption of MFS. In fact, service providers should simplify the usage of mobile financial services and continue to design a more user-friendly system interface. In addition, service providers should provide adequate information and clearer guidance to encourage users to adopt and utilize the service.

4.4.3 Personal Innovativeness

The respondents were also required to indicate their level of agreement with statements on the personal innovativeness affecting the adoption of mobile financial services by women informal groups/chamas

Table 4.10: Agreement with Statements on Personal Innovativeness

Statement	Mean	Standard Deviation
Learning to Use Mobile financial services requires a lot of training.	3.74	1.577
Mobile financial services are compatible with our group's savings activities.	3.95	1.278
Members of our group have already used MFS before and are technologically ready to accept it into use in the group's operations.	3.96	.7619
Use of Mobile financial services is easy.	4.00	.8090

From the study, majority of the respondents agreed that use of mobile financial services is easy as shown by a mean score of 4.00. Members of the groups have already used MFS before and are technologically ready to accept it into use in the group's operations as shown by a mean score of 3.96. Mobile financial services are compatible with the group's savings activities as shown by a mean of 3.95 and learning to use mobile financial services requires a lot of training as shown by a mean score of 3.74.

This indicates that the respondents were willing to use technology and were aware of mobile financial services. These findings agree with prior research that shows that personal innovativeness has a strong influence in determining acceptance of technology (Hung, Ku & Chang, 2003). Further more innovative users tend to accept new technology more positively (Rogers, 2003). Lu, Yao and Yu (2005) also found that innovative individuals will have higher tendencies to develop positive beliefs on new technology especially when the beliefs are developed through amalgamating of information from various media. Meanwhile, Mohr (2001) asserted that innovative users perceived lower risk and much open-minded. This means that those users with high innovativeness are more likely to explore and adopt mobile financial services.

High innovative individuals are usually the trendsetters along with high social economic status Mason et al (2003), hence, banks should formulate the marketing strategy (i.e. buzz marketing) to attract “innovators” and “early adopters”. Even though both categories only representing small segment of target market, they play an important role to influence others such as “early majority” to adopt mobile financial services.

4.4.4 Perceived Risk

The study further sought to establish the respondents' level of agreement with various statements on perceived risk. The results are shown in table 4.11.

Table 4.11: Agreement with Statements on Perceived Risk

Statement	Mean	Standard Deviation
Mobile financial services may not perform well thus processing payments incorrectly.	3.25	.6842
The level of uncertainty of the mobile financial service is higher.	3.50	.5923
I am afraid of losing my money or chama contribution when there are system malfunctions in mobile financial services.	3.74	1.577
I am not sure of the privacy of my money in the mobile phone because other people may get access to my account.	3.96	.7619
There is a risk associated to losses caused by sending cash to wrong accounts and wrong numbers erroneously.	4.00	.8090
Mobile financial services may not perform well because of network problems.	4.10	1.083
Mobile financial services are secure and certain over other modes of conducting financial transactions.	4.25	1.201
Mobile network operators have educated and created awareness to their customers on mechanisms to secure their funds in the phone accounts.	4.27	0.73

From the study, majority of the respondents agreed that mobile network operators have educated and created awareness to their customers on mechanisms to secure their funds in the

phone accounts as shown by a mean score of 4.27, mobile financial services are secure and certain over other modes of conducting financial transactions as shown by a mean of 4.25, the women were worried that mobile financial services may not perform well because of network problems as shown by a mean of 4.10 and the risk associated to losses caused by sending cash to wrong accounts and wrong numbers erroneously as shown by a mean of 4.00. The women were also worried with the privacy of their money in the mobile phone because other people may get access to their accounts with a mean of 3.96, losing their money or chama contribution when there are system malfunctions in mobile financial services as shown with a mean of 3.74, that the level of uncertainty of the mobile financial service is higher with a mean of 3.50 and they remained neutral that mobile financial services may not perform well thus processing payments incorrectly with a mean of 3.25.

This indicates that the women in chamas expect mobile financial services to proceed with their expectations and to be secure. The women also expect not to lose any privacy and any amount of money when doing mobile financial services transactions. These findings agree with Luo et al. (2010) who found out that user's perception of risk is a crucial driver to determine innovative technology acceptance and perceived risk discourages user to adopt new technology. Luo et al. (2010) further found out that perceived risk has negative significant relationship towards behavioral intention on mobile financial services adoption.

Even though several studies found that security issues are not the main inhibitor in the adoption of mobile financial services Suoranta (2003), Laukkanen, and J. Lauronenour (2005), findings show that there is negative significant relationship between perceived risk and mobile financial services adoption. This implies that individuals' perceived higher risk and uncertainty incurred in adopting mobile financial. Therefore, it is important for financial institutions and service providers to project higher security when providing mobile financial services in order to yield higher consumers' acceptance. In fact, financial institutions and

service providers should continuously innovate and offer better security and reliable applications to enhance users' confidence towards mobile financial services.

CHAPTER FIVE

SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

Having collected and analyzed data in chapter four, chapter five, which is the last chapter of the study, is aimed at presenting a summary of the study objectives, research methodology and findings. This chapter provides the summary of the findings from chapter four, and it also gives the conclusions and recommendations of the study based on the objectives of the study. The purpose of this study was to determine the factors that influence the adoption of mobile financial services among women in informal savings groups/chamas within Kisumu Central Sub-County.

5.2 Summary of the Findings

The study aimed at determining the factors that influence the adoption of mobile financial services among women in informal savings groups/chamas within Kisumu Central Sub-County and found that most of the respondents had been involved in the use mobile financial services to a great extent.

In the first objective the study sought to assess how the socio demographic factors influence the adoption of MFS among the informal women savings groups. Majority of the respondents were of a youthful age of between 25 years and 44 years of age. However, on finding out the extent to which the respondents were using mobile phone financial services, 100% responded positively. This highly suggests that with the diversity in age, income, employment statuses and educational levels among the informal women savings groups, they were aware of the

MFS and were actually utilizing these services to an extent ranging from very great to very little.

The study sought to examine the extent to which perceived usefulness and ease of use influence the adoption of MFS in informal women savings groups .The study found that perceived usefulness and perceived ease of use of mobile financial services influenced the women's adoption of mobile financial services. On the same most of the women stated that the language used in MFS is easy to understand, MFS's are easy to use and require minimum mental effort, MFS's are affordable, MFS's offer faster transactions thus time saving, MFS's are convenient and easily accessible and MFS's are useful and would enhance progress in the groups' activities.

The third objective of the study was to evaluate the extent to which personal innovativeness influence the adoption of MFS among informal women savings groups. The study found that personal innovativeness influences the adoption of mobile financial services. The respondents agreed that use of Mobile financial services is easy, members of the groups have already used MFS before and are technologically ready to accept it into use in the group's operations and that mobile financial services are compatible with the group's savings activities.

The fourth objective of the study was to investigate the influence of perceived risk on the adoption of MFS by informal women savings groups. The study found that mobile network operators have educated and created awareness to the women on mechanisms to secure their funds, mobile financial services are secure and certain over other modes of conducting financial transactions, the women are afraid that they may lose money when transferring cash incase the women put the wrong account number/mobile number, they were worried that someone might get my private information for example pin number and use it to defraud their accounts, they were worried about using mobile financial services because other people

may be able to access their account, when transaction errors occur, the women worry that they cannot get compensation and that the level of uncertainty of the financial service conducted through the use of mobile phones is high, while there was neutrality on that mobile financial services may not perform well thus processing payments incorrectly.

5.3 Conclusions

The study concludes that socio-demographic factors do not significantly influence the adoption of mobile phone financial services by informal women savings groups. This is indicated by the fact all the respondents agreed to having knowledge of the mobile phone financial services provided by different mobile network operators in the country and were all using the services albeit to different extents.

The study concludes that the perceived usefulness and perceived ease of use of mobile financial services affects to a great extent the adoption of mobile financial services by informal women groups/chamas. The various aspects of perceived usefulness and perceived ease that affect adoption of mobile financial services by women groups include the language used in MFS is easy to understand, MFS's are easy to use and require minimum mental effort, MFS's are affordable, MFS's offer faster transactions thus time saving, MFS's are convenient and easily accessible and MFS's are useful and would enhance progress in the groups' activities.

Personal innovativeness affects the adoption of mobile financial services as established by the study. On the same use of Mobile financial services is easy, members of the groups have already used MFS before and are technologically ready to accept it into use in the group's operations and that mobile financial services are compatible with the group's savings activities. However learning to use Mobile financial services requires a lot of training.

The study also concludes that perceived risk affects mobile financial services adoption by the women groups. This is because the mobile financial services are secure and certain over other modes of conducting financial transactions. However, the women are afraid that they may lose money when transferring incase the women put the wrong account number/or mobile number. The women worry that someone might get my private information, they are worried about using mobile financial services because other people may be able to access their account, when transaction errors occur, the women worry that they cannot get compensation.

5.4 Recommendations

MFS represents more than a means to achieving the goal of financial inclusion; it can offer potentially enormous financial benefits to governments (and citizens) while advancing economic development in general. After reviewing the findings of this study, there are several important implications suggested for financial institutions, service developers and software engineers in order to provide better strategic insight to design and implement mobile financial services that yield higher consumer acceptance in Kenya especially for the informal women groups/chamas that are gaining prominence in the country.

As Perceived usefulness and Ease of use, Personal innovativeness and Perceived risk were found to be the factors that influence consumers' behavior intention in adopting mobile financial services, service developers and software engineers should focus on the development of mobile financial services facilities. This can be achieved by developing better functions in terms of flexibility, security and accessibility features to enhance consumers' confidence to adopt mobile banking services. The government, the relevant policy makers should improve the policies governing the industry and use of ICT in financial services for quality of their services to the customers to minimize the problems that they get in using the service. Interest should be aimed towards improving services that ensure that the customer

get account balance details in time and with the least cost possible, request last transaction details is offered and they can pay for all if not most of their utility .

Personal innovativeness demonstrates a positive-significant relationship towards mobile banking adoption; thus the mobile financial services providers can promote and create awareness to the public through highlighting the benefits or advantages that can be gained from the mobile financial services to stimulate the adoption level among the mobile users especially the chamas. Instead, such promotion also provides better exposure and awareness to the non-mobile financial services users to have positive impression towards mobile financial services and utilize the application in future

Lastly, perceived risk greatly influences consumers' behavioral intention to adopt MFS, thus security is one of the important factors to stimulate customers' confidence level to adopt mobile financial services. The mobile financial service providers should enhance the security features consistently by practicing transparency management during the process of monetary transactions. They should carry out a countrywide campaign to allay fears of security/safety issues like complications of the mobile banking procedures and lack of awareness security limits of the mobile banking service. In this sense, it is important to build trustworthy business reputation in a long term perspective.

The study further recommends that the governments should strike a balance between enabling and supporting MFS and instituting appropriate checks and balances that ensure fair competition, a smoothly functioning marketplace, consumer protection and safeguards for providers. Risks to the system as well as to institutions, organizations and individual stakeholders must be properly mitigated. For these reasons alone, a wait and see posture may cost governments dearly in forfeited savings, economic activity, tax revenues and opportunity.

5.5 Contribution to body of knowledge

The study findings contribution to the body of knowledge as discussed in table 5.1 below

Table 5.1: Contribution to body of knowledge

Objective	Contribution to the body of knowledge
To assess how socio demographic factors influence the adoption of mobile phone financial services by informal women savings groups in Kisumu Central sub county.	Socio demographic factors do not significantly influence the adoption of mobile phone financial services. This is attributed to the wide knowledge of the services across the country.
To examine the extent to which perceived usefulness and ease of use of mobile phone financial services influence its adoption in informal women savings groups in Kisumu Central sub county.	Perceived usefulness and Ease of use of Mobile financial services has a positive influence to a great extent towards its adoption. A service that is useful and has a relative advantage over others as well as one that is easy to use and readily accessible positively influences its adoption.
To evaluate the extent to which personal innovativeness influence the adoption of Mobile phone financial services in informal women savings groups in Kisumu Central sub county.	Personal innovativeness influences positively the adoption of mobile phone financial services especially when the users are technologically ready to accept it.
To investigate the influence of perceived risk on the adoption of mobile phone financial services by informal women savings groups in Kisumu Central sub county.	Security is a major factor contributing to perceived risk by users of MFS. Therefore service providers should ensure that security features are enhanced constantly.

5.6 Suggestions for Further Research

The study has determined the factors that influence the adoption of mobile financial services among women in informal savings groups/chamas within Kisumu Central Sub-County. In relation to the findings of the study, the study suggests that a deeper insight into the activities of informal women groups/chamas adoption of mobile financial services should be undertaken adequately. Specific areas of research should revolve around the challenges experienced in mobile financial services and the strategies employed in dealing with the challenges. Particular attention needs to be focused on the ability of the consumers to endure these challenges and make a difference in their activities. A more in-depth study should also be conducted to establish the extent to which socio-demographic characteristics of the women, and in particular, their educational levels, age brackets, marital status and income levels influence the adoption of mobile financial services among women in informal savings groups/chamas since this study concludes that they do not affect the adoption process.

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APPENDICES

Appendix I: Letter of Transmittal

Ogello Irene Ajwang'

P.O. Box 1921,

Kisumu.

Tel: 0721340770

Dear sir/Madam

I am a final year Master of Arts Degree student at the University of Nairobi. My area of specialization is Project Planning and Management. I am currently undertaking a research study on the **factors influencing the adoption of mobile phone financial services by informal women savings groups in Kisumu Central Sub County.**

I kindly request for your assistance in responding honestly to the questionnaire availed to you. All information given will be treated with strict confidentiality. Your response will be treated as anonymous and will only be used for academic purposes.

Thank you

Yours faithfully

Ogello Irene Ajwang'

L50/69379/2013

Appendix II: Questionnaire

This study is designed to determine the factors that influence the adoption of mobile financial services among women in informal savings groups/chamas. You are kindly requested to complete the questionnaire as honestly and objectively as possible giving as much detail as possible where necessary. Write your comments in the space provided and tick appropriately.

SECTION A: Socio-demographic information

1. Your age bracket (Please tick whichever is appropriate)

- 18-24 Years
- 25-30 Years
- 31-34 Years
- 35-40 Years
- 41-44 Years
- 45-50Years
- Over 51Years

2. Please indicate your highest academic qualification.

- Primary
- Secondary
- Tertiary college
- University level
- Others (specify).....

3. Kindly state your employment status

- Salary/Wages
- Self employed
- Unemployed
- Others (specify).....

4. Please tick your level of income?

- Less than Ksh 10000
- Ksh 10000- 29000
- Ksh 30000-49000
- Ksh 50000 and above

5. What is your role in the informal savings group you are involved in?

.....

6. How long have you been participating in the informal savings group?

- Less than 1 year

- 1 to 3years
- 3 to 5 years
- More than 5 years

SECTION B:

7. Do you own a mobile phone?

- Yes
- No

If the answer above is No, why not?

.....

.....

.....

8. Which mode of payments do you mostly use in your group/ chama?

- Cash
- Cheque
- Mobile Money
- Others specify.....

9. Mpesa service is a widely known mobile financial service. Are you registered on M-pesa?

- Yes
- No

If answer to above is Yes,

a) How long have you used M-pesa?

- Less than 1 year
- Between 1 and 3 years
- Between 3 and 5 years
- Above 5 years

b) Do you know any other mobile financial services in the country?

.....

10. To what extent have you been involved in the use of mobile financial services in your group?

To a very great extent	To a great extent	To a moderate extent	To a little extent	To No extent

11. Would you consider the use of Mobile financial services in your group better than cash?

- Yes
- No

SECTION C: LIKERT SCALE

12. What is your level of agreement with the following statements on the factors affecting the adoption of Mobile financial services?

PERCEIVED EASE OF USE AND PERCEIVED USEFULNESS

Item	Statement	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree(1)
I.	Mobile financial services are convenient and easily accessible					
II.	Mobile financial services offer faster transactions, thus time saving.					
III.	Mobile financial services are affordable					

IV.	Mobile financial services are Easy to use and require minimum mental effort					
V.	The language used in MFS is easy to understand					
VI.	Mobile financial services would enhance my ability to save and invest more					
VII.	Mobile financial services are useful and would enhance progress in the groups activities.					

PERSONAL INNOVATIVENESS

Item	Statement	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree(1)
I.	Learning to Use Mobile financial services requires a lot of training					
II.	Mobile financial services are compatible with our group's savings activities					
III.	Members of our group have already used MFS before and are technologically ready to accept it into use in the group's operations					
IV.	Use of Mobile financial services is easy.					

PERCEIVED RISK

Item	Statement	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree(1)
I.	Mobile financial services are secure and certain over other modes of conducting financial transactions					
II.	The level of uncertainty of the mobile financial service is higher					
III.	Mobile financial services is may not perform well because of network problems					
IV.	I am afraid of losing my money or chama contribution when there are system malfunctions in mobile financial services					
V.	I am not sure of the privacy of my money in the mobile phone because					

	other people may get access to my account					
VI.	There is a risk associated to losses caused by sending cash to wrong accounts and wrong numbers erroneously					
VII.	Mobile financial services may not perform well thus processing their payments incorrectly					
VIII.	Mobile network operators have educated and created awareness to their customers on mechanisms to secure their funds in the phone accounts.					

13. Please state your suggestion on the recommendations you would give as regards the Mobile financial service provided

.....

.....

.....

.....

.....

THANK YOU FOR YOUR TIME AND COOPERATION



**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

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9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

2nd October, 2015

NACOSTI/P/15/56028/8244

Irene Ajwang Ogello
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Factors influencing adoption of mobile phone financial services by informal women savings groups in Kisumu Central Sub County*" I am pleased to inform you that you have been authorized to undertake research in **Kisumu County** for a period ending **2nd October, 2016**.

You are advised to report to **the County Commissioner and the County Director of Education, Kisumu County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


SAID HUSSEIN
FOR: DIRECTOR GENERAL/CEO

Copy to:

The County Commissioner
Kisumu County.

The County Director of Education
Kisumu County.

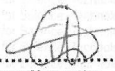
THIS IS TO CERTIFY THAT:
MISS. IRENE AJWANG OGELLO
of UNIVERSITY OF NAIROBI, 1921-40100
Kisumu, has been permitted to conduct
research in Kisumu County


Permit No : NACOSTI/P/15/56028/8244
Date Of Issue : 2nd October, 2015
Fee Received : Ksh 1000

on the topic: **FACTORS INFLUENCING
ADOPTION OF MOBILE PHONE
FINANCIAL SERVICES BY INFORMAL
WOMEN SAVINGS GROUPS IN KISUMU
CENTRAL SUB COUNTY**



for the period ending:
2nd October, 2016


.....
Applicant's
Signature

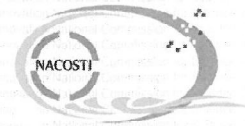

.....
Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.



REPUBLIC OF KENYA



National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No. A 6760

CONDITIONS: see back page

