# EFFECT OF MOBILE BANKING ON SAVING PRACTICES AMONG RESIDENTS OF KAPSABET TOWN, KENYA

**BY: PETER KIBET GOIN**

**D53/OL/23070/2012**

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (FINANCE OPTION) OF KENYATTA UNIVERSITY**

**APRIL 2019**

## DECLARATION

I declare that this research is my original work and has not been presented for a degree in any other University/ institution for consideration of any certification.

Signature ……Date…….

Peter Kibet Goin

Department of Accounting and Finance,

D53/OL/23070/2012

This research project has been submitted for examination with my approval as the appointed Supervisor.

Signature …….. Date ……..

Dr. Ambrose Jagongo,

Department of Accounting and Finance,

School of Business,

Kenyatta University.

## DEDICATION

I dedicate this research project to my dearest wife Mrs. Lucy Goin, my lovely daughter and son Megan and Keegan respectively.

## ACKNOWLEDGEMENT

The success of this research project would not have been what it is today if it were not for the cooperation and support of a number of people who guided me towards the ultimate goal. First and foremost is to thank the Almighty God for his guidance, providence and protection from the beginning of this program until now. Secondly I would like to express my appreciation and sincere gratitude to my research project supervisor, Dr. Ambrose Jagongo for his guidance and mentorship throughout the project. Thirdly is to thank my project corrections assistant Dr. Job Omagwa for his inspirational and tireless guidance in development of the project proposal. Finally I express utmost gratitude to my wife Lucy, daughter Megan AND son Keegan who offered relentless encouragement, love and motivation that made it possible for me to achieve my dream. Special thanks to my wife Lucy and my Children Megan and Keegan.

## TABLE OF CONTENTS

## LIST OF TABLES

## LIST OF FIGURES

## LIST OF ABREVIATIONS AND ACRONYMS

| | | |
|---|---|---|
| ATM | - | Automated Teller Machine |
| CAK | - | Communication Authority of Kenya |
| CBK | - | Central Bank of Kenya |
| CGAP | - | Consultative Group to Assist the Poor |
| EFT | - | Electronic Funds Transfer |
| FDI | - | Foreign Direct Investment |
| FSD | - | Financial Sector Deepening |
| GDP | - | Gross Domestic Product |
| GSM | - | Global Systems for Mobile. |
| GSMA | - | GSM Association |
| KCB | - | Kenya Commercial Bank |
| KNBS | - | Kenya National Bureau of Statistics |
| KShs | - | Kenya Shillings |
| MFS | - | Mobile Financial Services |
| PEOU | - | Perceived ease of use |
| PIN | - | Personal Identification Number |
| PU | - | Perceived usefulness |
| ROSCA | - | Rotating Savings and credit Association |
| SACCO | - | Savings and credit cooperative organizations |
| SMS | - | Short Message Services |
| SSA | - | Sub- Saharan Africa |
| TAM | - | Technology Acceptance Model |

TELCO - Telecommunication Company

USD - United States Dollar

## OPERATIONAL DEFINITION OF TERMS

**Mobile banking -** Mobile banking is a system that allows customers of a financial institution to conduct a number of financial transactions through a mobile device such as a mobile phone or personal digital assistant

**Chamas** - Social groups formed to help group members save money for specific purpose.

**Saving practices –** These refers to the saving methods used by customers to save money for future use.

**Formal Savings –** saving of money in financial institutions such as Commercial banks or SACCOs.

**Informal savings –** saving of money in traditional ways such as hoarding at home, keeping with relatives or friends and Chamas.

**SMS- based services** – these are value added services offered by banks and are restricted to alerts, such as mini statements, account balances.

**Mobile money (m-money)** - provision of banking- like services, such as money transactions via mobile phone.

**Perception of mobile banking**- How the mobile banking users think of the mobile money services in terms of; safety of savings, trust and effectiveness.

**Income of mobile users**- the sources of income of the mobile money users.

**Adoption of mobile banking services**- Uptake of mobile banking services by users.

**Incentives to save**- Benefits that make the users of mobile banking to embrace mobile money services (interest earned, user friendliness or cost of transactions)

# ABSTRACT

The rapid expansion of mobile banking technology in Kenya has enhanced financial inclusion to the unbanked population who for many years used informal saving practices such as chamas, hoarding at home or keeping with relatives to save money. Banking services in commercial financial institutions were for many years located in urban centers and had strict rules and selected clientele that looked out a majority of the population who resorted to informal money saving practices. With accessibility to mobile services and the growing technology, majority of the population have acquired a mobile phone and register with the available mobile money services, due to the ease of use of the mobile money services the adoption has been tremendous turning the informal saving practices into formal practices right at the palm of their hands using the mobile phone, due to the shift there is need to establish whether the new mobile technology has indeed affected the saving practices of the users. The main objective of the study was to establish the effect of mobile banking on saving practices amongst residents of Kapsabet town, Kenya with the specific objectives being; to establish the effect of perception of savings through the mobile phone, income on savings practices, adoption of mobile banking and incentives to save available to mobile banking users on the saving practices. Descriptive research design was used in the study to enable a generalization of the research findings from the target population. The results obtained were analyzed qualitatively and quantitatively using Microsoft excel and regression analysis tool. Quantitative data was interpreted and inferences were made and presented using charts, tables and percentages. The study concluded that mobile banking has improved the saving practices of Kapsabet town residents and this was mainly made possible by the improved technology on both devices and on the mobile money services, the cost of service, perceived ease of use, convenience and security of transactions have collectively enhanced the uptake of mobile banking services. Kapsabet town residents were using mobile money for different purposes including online purchasing, payment of bills, receiving payment, payment of goods and services, savings as well as money transfer, which significantly influenced their saving practices. The study recommends that Communication Authority of Kenya (CAK), which regulates mobile money services, and the Central Bank of Kenya (CBK), which regulates the banking industry, should formulate clear regulations to ensure smooth running of mobile money services.it further recommends that mobile money service providers be regulated to prevent them from exploiting users. The findings of this study will be of importance to economic policy makers, mobile service providers, financial institutions and scholars.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background to the study

In Kenya as well as in other developing countries limited access to formal financial institutions makes informal networks provide an important means by which individuals and households build up savings. Such informal saving mechanisms include saving in livestock or jewels, saving at home "under a mattress", saving with a neighbor or in a more organized way participating in a rotating savings groups such as chamas. Relying on these informal savings methods is well known to be risky, inappropriate and incomplete at least for two reasons. First, this way of saving is subject to theft or "taxes" by friends or relatives for assistance. Second, savers face self-control problems through "temptation goods" that make it difficult for them to postpone an important part of their consumption (Banerjee & Mullainathan 2010).

According to Reed, Jotischky, Newman, Mbongue & Escofet (2014), many people do not have a bank account, but it is increasingly likely that they will have a mobile phone and this has presented an opportunity for the mobile to fill a gap in the financial services infrastructure. This expansion in data use is creating new business opportunities on the continent, not only in providing connectivity, but also in offering digital services including mobile financial services, e-commerce and digital content. A mobile account provides the ability to perform functions often taken for granted such as: depositing and withdrawing cash, storing funds securely over time and sending and receiving electronic payments including to and from businesses, governments and financial institutions (Alexandre & Almazán, 2012).

### 1.1.1 Mobile Banking

Mobile banking is concerned with the provision of financial services using telecommunication devices in collaboration with mobile service providers. Drexelius & Herzig (2001) on their

part see mobile banking as the capacity of a firm to carry out bank transactions via a mobile device. Although mobile banking is free for all, it is credited for offering a possible solution to a huge population that have access to mobile telephony but have been excluded from financial mainstream for varied reasons therefore making them financially included.

Tiwari, Buse & Herstatt (2006) further consider mobile banking as a transaction that transfers ownership of goods and services through the use of mobile networks and an electronic device. The banking industry has come a long way in ensuring its survival having experienced increased competition over the last few years arising from increased innovations among the players and new entrants into the financial market, through the provision of mobile banking services.

Mobile banking is one innovation which has progressively rendered itself in pervasive ways cutting across numerous sectors of economy and industry. An appropriate banking environment is considered a key pillar as well as an enabler of economic growth (Koivu 2002). With the continuously emerging wave of information driven economy, the banking industry in Kenya has inevitably found itself unable to resist technological indulgence. The need for convenient ways of accessing financial resources beyond the conventional norms has seen the recurrent expansion and modernization of banking patterns. And given the huge demand for finance oriented services, institutions beside the historical banks have joined the fray in an attempt to grab a piece of the perceived cake of opportunity within the banking industry.

According to Porteous (2006), mobile banking includes mobile payments but involves access by mobile device to the broader range of banking services, such as account-based savings or

transactions products offered by banks. Mobile money systems consist of electronic money accounts that can be accessed via mobile telephones. They are often likened to simple bank accounts, although a basic mobile money system does not pay interest or provide loans. Each of the mobile service providers in Kenya currently has a mobile money service. Safaricom M-PESA was introduced in March 2007, Zain's Zap (now known as Airtel Money) was initiated in February 2009, yu Cash started in December 2009, Orange's Orange Money was launched in November 2010 and Just recently Equity bank Launched Equitel.

### 1.1.2. Savings Practices

Savings can be defined as income that is not consumed in a particular time period and is therefore viewed as postponed consumption (Strydom, 2007) and therefore occurs when people abstain from consumption, that is, when they consume less than their income. The decision mainly depends on disposable income and tastes or preferences for spending now versus waiting. Recent research has found that low-income households have increased their savings as a result of adopting mobile banking (Banerjee & Duflo 2011). Individuals excluded from the formal financial system practice informal savings method such saving under the mattresses, putting it in a hole, buying stocks and other assets which can be disposed when need arises.

The two main categories of savings are household savings and corporate savings. Strydom (2007) suggests household sector saving constitutes that part of current household income that is not consumed after the payment of direct taxes. These saving can take the form of either discretionary or contractual savings. Corporate saving can be described as a company's net income not paid out in dividends to its shareholders but is instead retained within the firm as retained earnings (Love) 2011. Such savings can be put into future use or can be ploughed

back into the business for expansion purpose. According to Turnham (2010) inadequate income, and lack of access to savings programs affected the level of savings as well as instability of income.

### 1.1.3 Mobile Banking and Saving Practices

Mobile banking growth has presented an opportunity to improve the effectiveness of savings products with mobile network coverage and mobile cash agents increasingly reducing the barrier to serve the unbanked and underserved. Most banks are also connected to mobile service providers to facilitate mobile banking therefore increasing access to savings products. For example, M-shwari service, a service provided by M-pesa and Commercial bank of Africa, has enabled customers' access savings accounts while Equity bank is using its mobile service Equitel to reach people. A bank offering mobile savings has become an crucial mechanism of providing banking services to the underprivileged. This is because banking services, with the use of mobile savings can be accessed using mobile phone agents, which in Kenya outnumber the number of bank branches significantly (Mas & Radcliffe, 2011).

### 1.1.4 Residents of Kapsabet Town, Kenya

Kapsabet is a town in Nandi County and has a population of 86,803 (KNBS, 2014). The town is located East of Kakamega forest making it a major agricultural produce town. The town is stratified into five zones that is Kamobo, Show ground, Central business district (CBD) and Namgoi (East view). Kapsabet town is considered appropriate for the study because of the economic activities in the area and being the county headquarters the town is gaining from high influx of a working population.

## 1.2 Statement of the problem

The world at large is experiencing rapid technology migration to both higher speed mobile broadband network and the increased adoption of smart phones and other connected devices. Affordable mobile phones and the opportunities they provide for the society is already becoming one of the most dramatic game changing technologies the world has ever seen. According to Reed *et al.* (2014), many people do not have a bank account, but it is increasingly likely that they will have a mobile phone and this has presented an opportunity for the mobile to fill a gap in the financial services infrastructure. This expansion in data use is creating new business opportunities on the continent, not only in providing connectivity, but also in offering digital services including mobile financial services, e-commerce and digital content. A mobile account provides the ability to perform functions often taken for granted such as: depositing and withdrawing cash, storing funds securely over time and sending and receiving electronic payments including to and from businesses, governments and financial institutions (Alexandre & Almazán, 2012).

A study by FSD Kenya reveals that 11.5 million Kenyan adults , nearly 62 percent of adults, use mobile financial services, which can be used to pay schools fees or electricity bills through a simple mobile handset, eliminating the time and paperwork previously required to complete such basic transactions manually. Mobile money, then, is heralded for its promise of hastening financial inclusion. Despite its success, 53 percent of Kenyan adults that use mobile financial services do not have an account with a bank. At the same time, 5.16 million Kenyan adults (nearly 28 percent) belong to informal savings groups, groups which provide the opportunity to save, and often borrow, without the constraints of needing to be close to a mobile money agent or a physical bank branch. Among the poorest fifth of Kenyan adults,

15.5 percent use these informal savings groups and 28 percent use mobile financial services, (World Bank,2011).

Morawczynski (2009) studied saving through the mobile phone-the case of Mpesa which showed that the people of various income levels use a variety of mechanisms to meet their unique saving needs, the findings concluded that Mpesa has a vital role in mobilizing savings as most users viewed it as more accessible and cheaper than the bank.it also provides additional security to savers by removing the money from home and rendering money invisible. The study further suggests that incomes of rural mobile money transfer recipients have increased due to remittances, which have also led to higher savings by households. These results are based on an ethnographic study conducted in Kibera, a slum in Kenya, in 2007.

Access to mobile phones and the available mobile banking services have been greatly adopted in Kenya and the unbanked can now access banking services through the mobile banking, Use of mobile banking also provide payments and remittance services hence the need for the mobile users to have money held in the phone, this has enhanced the saving of money which previously was not the case as most of the unbanked population saved informally by hoarding under the mattresses or safes, loaning relatives or in groups called chamas. While users are employing the mobile banking systems to make payments for things such as airtime and pre-paid electricity, many are using them for sending remittances back to friends and relatives in their rural villages (Burt, 2002). Pre-paid tariffs as well as cheaply manufactured phones from China have contributed significantly to the spread of mobile technology in Kenya. Consequently, the number of mobile phone users has immensely surpassed the number of people with bank account across the world (Tobbin, 2012).

In Kenya, there have been an inadequate number of studies to determine if indeed mobile banking has any effect on saving practices. With the mobile penetration increasing, there is a likely hood that saving practices will shift from informal saving groups. The question that this study sought to answer thus is, does mobile banking affect savings practices among residents in Kapsabet town?

## 1.3. Objective of the study

### 1.3.1. General Objectives

The main objective of this study was to establish the effect of mobile banking on saving practices amongst residents of Kapsabet town, Kenya.

### 1.3.2. Specific Objectives

The study sought to achieve the following specific objectives:

i. To establish the effect of perception of savings through the mobile phone on the saving practices among residents of Kapsabet town, Kenya.
ii. To determine the effect of income on savings practices among residents of Kapsabet town, Kenya.
iii. To establish the effect of adoption of mobile banking on saving practices among residents of Kapsabet town, Kenya.
iv. To establish the effect of incentives to save available to mobile banking users on the saving practices among residents of Kapsabet town, Kenya.

## 1.4. Research Questions

The study attempted to answer the following questions:

i. How does the perception of savings through the mobile phone affect saving practices among residents of Kapsabet town, Kenya?

ii. What is the contribution of income on saving practices among residents of Kapsabet town, Kenya?

iii. How does adoption of mobile banking affect saving practices among residents of Kapsabet town, Kenya?

iv. What is the effect of incentives to save available to mobile banking users on saving practices among residents of Kapsabet town, Kenya?

**1.5. Significance of the study**

The findings of this study are of importance to economic policymakers. Savings being an important economic variable needs to be mobilized in order to create capital for undertaking investments. The mobilization of savings requires a sound policy and it is clear that the findings of this study should be helpful in defining such a policy. The study is also important to other scholars and researchers interested in learning more about the effect of mobile banking on the savings. It builds up a body of knowledge that is useful to both current and future scholars.

Managers of financial institutions will find the study immensely important particularly because commercial banks are the main mobilizes of savings through deposit funds. They are keen to know the findings of the study not only because a positive effect of mobile banking on savings competes with their efforts to mobilize savings, but also to use the findings to tailor their products in such a way that they can partner with mobile companies to mobilize even further deposits from clients they were previously unable to reach.

**1.6 Scope of the study**

The study addressed effects of mobile banking services on saving practices among residents of Kapsabet town, Kenya. Kapsabet town was chosen by the researcher because of proximity

and also because there were no previous research on the subject. The study majorly covered the main urban center of Kapsabet town. The target groups were the residents of the municipality. The researcher targeted a population of 86,803(KNBS, 2014) residents of which a sample of 196 respondents who owed a mobile phone and had subscribed to mobile money service in any of the available service providers. 196 questionnaires were issued at the various suburbs of the town and neighboring shopping centers, 138 questionnaires were received back after two weeks and they were analyzed to establish the research findings. Data analysis and presentation took one month to complete.

### 1.7 Limitations of the Study

Non-responses from the target population and lose of questionnaires by some respondents was experienced during the data collection exercise. This was however minimized by embracing humility and providing proper explanations on the importance of the research. Some respondents expressed fear of giving out information on their personal finances. This was minimized by assuring them of confidentiality and by not taking their identification details. The introductory letter given by Kenyatta University was used to create confidence among the respondents

The researcher encountered delay in receiving the research permit from NACOSTI, The delay significantly delayed the data collection hence the delay in completing the study. The researcher also encountered delays due to time constraints as the researcher is full time employee and only used free time to carry out the research work. This was however solved by engaging five research assistants who distributed the questionnaires and returned on time.

Developing the statistical presentation was a tedious task, since the researcher was not very

conversant with the SPSS 23 program. This required some extra training on the software to enable proper usage of the same to get the necessary statistical presentations for the data. To complete the data analysis I engaged a friend who was well conversant with SPSS and he generously guided me to understand and I was able to complete the project successfully.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Introduction

This chapter sought to examine in detail the available literature and studies that have already been conducted and which are directly related to the topic under study. The key areas covered include; theoretical reviews, summary of the literature review and research gaps, and conceptual framework.

## 2.2 Theoretical Review

For the purpose of this study, three theories on mobile banking are reviewed for form its conceptual basis. They include; Technology Acceptance Model, Modern economics theory and Transaction cost theory.

### 2.2.1 Technological Acceptance Model (TAM)

Technology acceptance model (TAM) explains reasons why a user will accept a range of emerging technologies in the computing world (Davis, 2009). In addition, TAM provides empirical support to explain why users embrace new technology (Agarwal and Prasad, 2009). They further stated there is need for TAM to be integrated with other IT approaches to be able to understand the reason behind user acceptance of technology characteristics. TAM further explains that the importance and ease of a computing technology in explaining difference in users‟ perception (Davis, 2009) and can therefore be concluded that TAM is based on the user attitude, perceive ease of use and usefulness of the system. TAM provides an explanation on how one can influence a user attitude, believe and intention to use. According to TAM, a technological system influences a user's intention and perception of the importance of the system or how easy it is to use. TAM also highlights the effect of external factors on the use of the new technology since it recognizes the perceived usefulness and ease of use.

Hence, from above model the usage behavior of mobile subscribers (customers) in using a technology (M-Banking) are predicted to be much dependable on the perceived value of the technology and the perceived ease use of it that will bring forward the intention to use the perceived technology. The following are defined factors influences users with the usage behaviors of the new technology: Perceived usefulness (PU) this was defined as a degree to which a person believes that using a particular system will enhance his or her job performance (Davis, 1989). Perceived ease of use (PEOU) it was defined a degree to which a person believes that using a particular system would be free from effort (Davis, 1989). However, since technologies and elements of uncertainty exists in the minds of decision makers with respect to the successful adoption of them, people tends to form attitudes and intention towards trying to learn to use the new technology prior to initiating efforts directed at using(Bagozzi &Warshaw,2007).

### 2.2.2 Modern Economics Theory

Modern economics has gone far in discovering the various pathways through which millions of expectations of, and decisions by, individuals can give rise to emergent features of communities and societies like rate of inflation, productivity gains, and level of national income, prices, and stocks of various types of capital, cultural values, and social norms. Two factors make economic theory particularly difficult (Sohail and Shanmugham, 2003). First, individual decisions at any moment are themselves influenced by these emergent features, by past decisions learning, practice, and habit, and by future expectations. Second, the emergent features that can be well handled by existing economic theory and policy concern only fast-moving variables. The more slowly emergent properties that affect attitudes, culture, and institutional arrangements are recognized, but are poorly incorporated.

According to Tiwari, Buse and Herstatt (2006), economists know that success in achieving financial return from fast dynamics leads to slowly emergent, nearly hidden, changes in deeper and slower structures, changes that can ultimately trigger sudden crisis and surprise. But the complexities that arise are such that most modern economists are frustrated in their attempts to understand the interactions between fast- and slow-moving emergent features.

## 2.3 Empirical literature

### 2.3.1 Mobile banking and saving practices

The Kennedy & John (2016) study sought to determine the effect of mobile money on saving and money transfer practices for low income earners in Kenya, the study suggest that advent of mobile money in Kenya has influenced the various saving practices among low-income earners in Kenya. First mobile money appears to have been associated with a significant shift from the practice of saving money by hiding it in houses. This finding is in line with Haas, Plyer & Nagarajan (2010) and Macharia & Okunoye (2013) that mobile money provides a safer saving alternative. The practice of saving money in non-monetary forms such as animals and grains however appears not to have been affected by the introduction of mobile money in the rural areas where it is normally practiced. This is a practice that is deeply rooted especially for pastoralists who store their wealth in animals. The introduction of mobile money on the other hand appears to have been associated with an increase in the number of low income earners saving their money with formal banks and SACCOs. This suggests that mobile money is associated with an improvement in financial inclusion to hitherto financially excluded low-income earners. The Mbiti & Weil (2014) and Mothiora (2015) studies on the impact of Mpesa in Kenya arrived at similar findings.

Morawczynski (2009) fieldwork in Kenya documents that mobile money acts as a complement of others saving mechanisms. Some people use their mobile money account to separate their business savings from their personal savings, others withdraw their money from the bank account to save it into their mobile money account or just use it to accumulate money and remit it to relatives when they reach the target amounts. These findings appear to reflect that mobile money affect the saving behavior of users through a breakdown of saving amounts. In this context, mobile money should have no effect on the behavior of individuals to save more, then keeping the overall level of saving unchanged.

Demombynes & Thegeya (2012) in a study established that M-PESA usage increases savings as a simple storage device. They argue that while it does not pay interest, mobile money is considered as a device to store funds safe from dangers of theft and inaccessible to relatives. Hence, it can be relevant to highlight the impact of mobile money usage on individual savings behavior and in some manner on savings patterns such as unpredictable and predictable objectives.

Nandhi (2012) studied the effects of mobile banking on the savings practices of low income users in India, a number of key findings emerged from the field survey, firstly, the ability to save has improved for a majority of users through mobile banking by comparison to earlier practices such as keeping cash on hand. This informal savings often are susceptible to unnecessary and trivial expenditures. Secondly, mobile banking has become a very effective, safe, and trustworthy savings instrument for its users; importantly, dependence on risky informal methods has decreased for a large percentage of customers who were previously dependent on these practices for lack of affordable and safe savings options. Thirdly, mobile

banking is perceived as a good substitute to both traditional banking and informal forms of savings; however, it has not dispelled the need for existing savings mechanisms and lastly, mobile banking is used in conjunction with or as complementary to an existing saving practice.

Olga (2009) sought to establish savings through the mobile phone –The case of M-PESA, the findings suggested that M-PESA can have a much greater role in the mobilization of savings, rather than just being a mechanism in the financial portfolio, it can provide a platform on which various savings mechanism can be accessed. A study by FSD Kenya (2011), financial inclusion in Kenya found that 40 of Kenyans surveyed do not join savings groups because they either don't know or don't trust their neighbors. By using mobile money, trusted Companions and family members may be included in savings groups, regardless of location. For example, an extended network of friends and family across different villages can start their own savings group, even though they live apart. The traditional informal savings group model requires regular and consistent meetings. The meetings are designed to bring the members together to make their deposits in front of the group, assurance that every member is participating. Mobile money decreases the need for frequent meetings, as there are solutions that allow deposits to be logged without compromising transparency, as discussed above.

### 2.3.2 Income and Saving practices

Nandhi (2012) studied the effects of mobile banking on the savings practices of low income users in India, in the mobile banking service are valued as a boon for small savers and users who depended on risky informal savings practices. In a study done by Olga Morawczynski (2009) on saving through the mobile phone-the case of M-PESA revealed that the poor use a combination of saving mechanisms to manage their limited income and to meet their unique

saving needs. The study further illustrated that the poor were very strategic when cultivating their savings portfolios.

Dupas & Robinson, (2013) performed a field experiment on 771 individuals in rural Kenya to test the effects of four innovative commitment saving devices through the "mental accounting". The Safe Box and the Lockbox were provided, to two groups, a box with and without the key respectively to save for preventative healthcare expenses. The Health Savings Account and the Health Pot held at a ROSCA used social pressure to encourage members to save for emergencies health expenses. They find that earmarking for health emergencies increase people's ability to cope with shocks.

Sameroynina (2005) studied saving behavior among households in Russia and deduced that the marginal propensity to save out of income is positive. This concurs with economic theory where an increase in income is bound to lead to an increase in saving. A study of some Asian countries by Lahiri (1989) indicated that the rate of growth of personal disposable income determines private saving. Tchouassi (2012) sought to determine whether mobile phones really work to extend banking services to the unbanked using empirical Lessons from Selected Sub-Saharan Africa Countries. This study sought to discuss how mobile phones could be used to extend banking services to the unbanked, poor and vulnerable population. The study noted that poor, vulnerable and low-income households in Sub-Saharan Africa (SSA) countries often lacked access to bank accounts and faced high costs for conducting basic financial transactions. The mobile phone presented a great opportunity for the provision of financial services to the unbanked.

### 2.4.3 Adoption of Mobile banking services and saving practices

Demombynes (2012) sought to establish the relationship between improving informal savings groups with mobile technology, the researcher established that with all the successes and benefits of savings groups and mobile phone technology, combining the two creates the potential to improve each, without losing their intrinsic benefits. Using mobile money eliminates exclusion from the group when someone moves away, and in fact can increase savings from that person's continued contribution through remittances. Family members can participate in savings groups, regardless of their location. This is particularly important in areas where families have been displaced. By operating a savings group over mobile money, the group's agenda may continue even during times of conflict or disaster. Most importantly, adding mobile technology to the traditional model doesn't compromise the initial trust foundation, but rather improves it.

Ching *et al* (2011) studied the factors affecting Malaysian mobile banking adoption from the point of an empirical analysis. This study aimed at extending the Technology Acceptance Model (TAM) to investigate mobile banking acceptance in Malaysia. More specifically, the objective of this study was to examine the relationships between constructs of perceived usefulness, perceived ease of use, social norms, perceived risks, perceived innovativeness, and perceived relative advantages towards behavioral intention in adopting mobile banking. The findings of this study revealed that perceived usefulness, perceived ease of use, relative advantages, perceived risks and personal innovativeness were the factors affecting the behavioral intention of mobile users to adopt mobile banking services in Malaysia. Meanwhile, the social norms were the only factor found to be insignificant in this study.

According to Jack & Suri (2011) results of a 2009 survey of Kenyan households that use M-

PESA, they find that M-PESA reached nearly 40 percent of the Kenyan adult population after only two years of operation. While M-PESA was initially adopted mostly by wealthier households, adoption by less wealthy households was also increasing. Jack & Suri (2011) also find an increase in the use of M-PESA by the unbanked population. However, their findings suggest that not owning a mobile phone is a major constraint to the adoption of M- PESA. They also find that M-PESA users with a bank account are much more likely to save on M-PESA than M-PESA users without a bank account. The majority of users cite ease of use and safety as the major reasons for saving on M-PESA.

According to the Global Findex Database (2014) study on saving, credit and financial resilience, 52 percent of Kenyans use at least one saving product. In addition; the study found that uptake among urban populations was as high as 60 percent while rural population usage hovered at 49 percent. When respondents were asked what financial service they used to save, M-PESA and commercial banks both led the way.

### 2.3.4 Incentives offered and saving practices

Nandhi (2012) studied the effects of mobile banking on the savings practices of low income users in India where it established that a high percentage of users save in mobile banking for emergencies. More importantly, it is considered as a robust substitute to many informal savings mechanisms as well as a bank account. The study also established the mobile banking users have not dispelled the need for some of the savings mechanisms used earlier because different savings method were perceived as having their own usefulness and purpose.

Morawczynski, (2009) found that in Kenya, people living in urban area are less likely to use their M-PESA account to save because they have enough saving mechanisms to meet their

needs. Dupas *et al.* (2012) surveyed rural areas in Kenya and found that in rural area in Kenya the lack of formal bank account make it more difficult for people to save, they will be unlikely to have enough saved up to deal with unexpected emergencies such as household illness. In this context, the study concludes that by providing individuals with the mobile money can increase their ability to save for unpredictable events. However, people in rural area are engage in informal saving mechanisms that seem more appropriate for long term needs. As mobile money increase access to cash, its impact on individual behavior to save for predictable events could be smaller or null.

The 2014 Global Findex survey asked about three specific reasons for saving; for old age, for education expenses and to start, operate, or expand a business. Worldwide almost 25 percent of adults reported having saved in the past year for old age, a similar share for education expenses and 14 percent for business. More than 30 percent of adults in East Africa reported saving for education, 20 percent of adults reported saving to start, operate or expand a business. Globally about 15 percent of adults reported having saved in the past year for some other reason, this might include saving to buy a home, for another large purchase or for a wedding or funeral.

When looking directly at the impact mobile money has had on savings, a number of surveys show clear positive results. A FSD survey conducted in November 2010 compared the savings habits and usages of M-PESA users versus M-PESA non-users. The initial survey collected data on more than 6,000 individuals and was supplemented by a more detailed survey of M-PESA users' activities and background. The results showed that 65 percent of M-PESA users reported saving compared to 31 percent of non-users. Results from the survey also showed

that M-PESA savers were predominately saving for precautionary measures (46 percent) like emergencies, children's future, retirement, etc. and then for a big purchases (38 percent) like education and business provisions and finally for liquidity management and day to day household needs (16 percent).When asked to rank the importance of (a) buying airtime,(b) storing money, (c) sending money, (d) receiving money,(e) paying bills, and (f) having someone pay for your bills, storing money was ranked second in importance behind only sending and receiving money.

**2.4. Summary of the literature review and research gaps.**

**Table 2.1: Literature review and research gaps**

| **Author** | **Title** | **Methodology** | **Findings** | **Study gaps** | **Addressing the gaps** |
|---|---|---|---|---|---|
| Kennedy &John (2016) | effect of mobile money on saving and money transfer practices for low income earners in Kenya | Qualitative | -Poor receive remittances from relatives.<br>-Unbanked population saves on the phone. | Target population was small, a lot of generalization. | Expand the target population |
| Nandhi (2012) | Effect of mobile banking on saving practices of low income users in India | Descriptive design | -Ability to save improved mobile banking has become an effective, safe and trustworthy saving instrument.<br>-Mobile banking perceived as a good substitute for | The research is specific to India's EKO mobile | To cover expanded mobile money and mobile banking services. |

| | | | | | |
|---|---|---|---|---|---|
| | | | traditional banking. | | |
| Ogla (2009) | To establish saving through the mobile phone –the case of peas | Case study | -Mpesa plays a greater role in mobilization of savings.<br>-Poor people use combination of saving mechanisms. | The amount of savings per person lack | Further study be carried out |
| FSDKenya(2011) | Financial inclusion in Kenya | Quantitative, semi-structured interviews | -Kenyans in groups do not trust informal savings.<br>-Mobile banking has improved the trust lacking in informal saving. | The area covered is in the urban poor only | Further research needed for rural poor |
| Sameoroyning(2005) | Saving behavior among households in Russia | Case study, Questionnaires | -Marginal propensity to save out of income is positive. | The research is only for Russia. | Further research in Kenya. |
| Tchouassi(2012) | Determining whether mobile phones really work to extend banking services to the unbanked in Sub-Saharan Africa | Qualitative | -Poor, vulnerable and low income households lack access to banks.<br>-Mobile phone present an opportunity for | The paper is generalized on Sub-Sahara Africa. | Further research needed in the individual countries. |

| | | | | | |
|---|---|---|---|---|---|
| | | | provision of financial services to the unbanked. | | |
| Lahiri(1989) | Dynamics of Asian savings: the role of growth and age structure. | Case study | -Rate of growth of personal disposable income determines private savings. | Specific to Asia, | Further research in Kenya. |
| Demombynes(2012) | Kenya's mobile revolution and the promise of mobile savings. | Descriptive design | -Mobile technology has enhanced savings to informal groups.<br>-Saving in the phone eliminates the risk of group member leaving. | Group's savings not adequately explained. | Sample groups be researched on |
| Ching *et al*(2011) | Factors affecting Malaysian mobile banking adoption from point of an empirical analysis. | Qualitative | -Perceived risk, usefulness & ease of use affect adoption. | Effects of social norms not studied. | Furher research on effects of social norms |
| Jack & Sun(2011) | The economics of Mpesa. | Case study | -Less wealthy families have adopted mpesa.<br>-Not | The research is too general and may not represent the entire country. | Further research can be conducted in a sample of counties, |

| | | | | | |
|---|---|---|---|---|---|
| | | | owning a mobile phone is a major setback.<br>-Mpesa users with bank account save on the phone.<br>-Ease of use and safety contribute to savings. | | to generalize more accurately |
| Dupas et al (2012) | Challenges in banking the rural poor in Kenya's western province. | Case study, semi-structured interviews | -Rural areas in Kenya lack formal banking services making it difficult for residents to save.<br>-Providing people with mobile money increase their savings.<br>-People in rural Kenya engage more in informal saving mechanisms. | | |

**Source: Researcher (2019)**

## 2.5. Conceptual Framework

The conceptual framework of the study is as shown in figure 2.1. The model shows the four variables affecting saving on the mobile banking; perception, income levels, adoption of mobile banking and the incentives to save. The saving practice of Kapsabet town residents is the dependent variable.

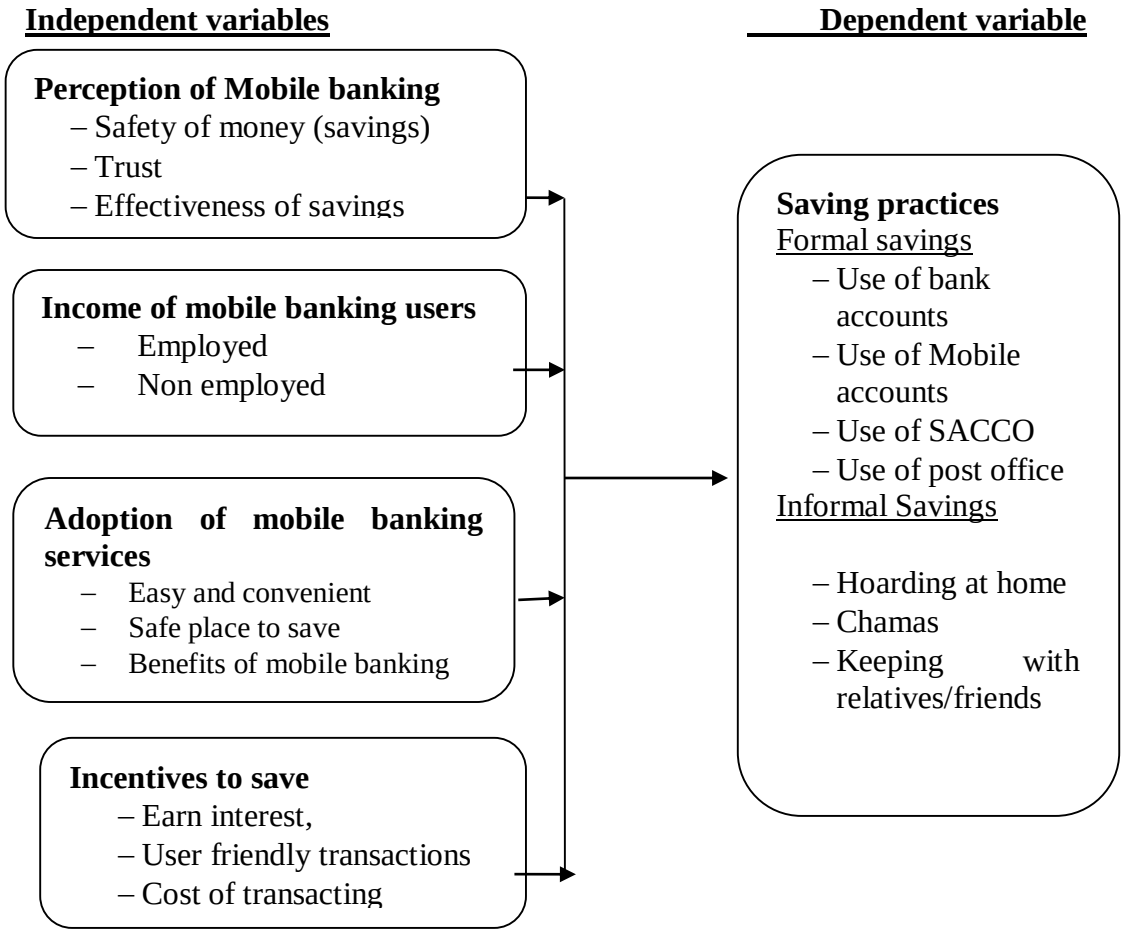



**Figure 2.1: Conceptual model**

**Source: Researcher (2018/2019)**

# CHAPTER THREE: RESEARCH METHODOLOGY

## 3.1 Introduction

The chapter discusses the methodology that was used by the researcher. It will focus on the research design, targeted population, sampling technique and sample size, data collection procedure, reliability and validity, data analysis and data presentation. Combinations of all these components lead to the results upon which conclusions were made. Research methodology therefore provided a framework under which the study was conducted.

## 3.2 Research Design

Research design are plans and the procedures for research that span the decision from broad assumptions to detailed methods of data collection and analysis (Creswell 2009). The study adopted a descriptive research design. Mugenda & Mugenda (2003) describes descriptive research design as a systematic, empirical inquiring into which the researcher does not have a direct control of independent variable as their manifestation has already occurred or because the inherently cannot be manipulated. Descriptive studies are concerned with the what, where and how of a phenomenon hence more placed to build a profile on that phenomenon (Mugenda & Mugenda, 2003). Descriptive research design was more appropriate because the study sought to build a profile about the effects of mobile banking on the saving practices among residents of Kapsabet Town, Kenya. The design was chosen because it enables the researcher to generalize the findings to a larger population.

## 3.3 Target population

Population in statistics is the specific population about which information is desired. According to Ngechu (2004), a population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated. The target

population of the study was the total number of residents in Kapsabet town. The population of Kapsabet town is 86,803 according to 2009 census (KNBS, 2014). This population was selected since it was believed that most town residents have access to the mobile money services. The research being a case study, utilized a sample of the population of Kapsabet town, Kenya and the surrounding estates. Each and every resident sampled had a mobile phone and used the mobile money services.

### 3.4. Sampling Design

According to Mugenda & Mugenda (2003), sampling is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which they are selected. The reasons for sampling are lower cost, greater accuracy of results, and greater speed of data collection and availability of population elements. A simple random sampling technique was used to identify individual respondents in the population since the population in question was relatively extensive due to geographical locations. Respondents were randomly selected for the study from each geographical location.

#### 3.4.1 Sample Size

From the population of 86,803 residents (2009 census), a sample of 196 residents was used. Kothari (2006) suggested a formula to be used in determining the sample size. It stated if confidence level of 95.5 percent is required, then taking 'p' being the value of the defectives in the population which we take as 0.02, N=86803, z=2.005 from the tables of area under normal curve for a confidence level of 95.5 percent.

$$n = \frac{z^2.p.q.N}{e^2 (N-1) + z^2.p.q}$$

$$= (2.005)^2 (0.02) (1-0.02) (86803)$$

$$(0.02)^2 (86803-1) + (2.005)^2(0.02) (1-0.02)$$

$$=196$$

### 3.5. Data collection instruments

In collecting the data for this project, the main instrument that was used by the researcher was the questionnaires. Kothari (2006) recommends that for large inquiries the questionnaire are the most ideal data collection instruments since the cost involved is low, it is free from the interviewer bias and the respondents are given adequate time to give well thought out responses. Questionnaires also ensure that a large sample is used thus making the results more dependable. In using the questionnaire a pilot study was carried out and the weaknesses brought to light were rectified.

#### 3.5.1. Validity of Instruments

Validity is the accuracy and meanings of inferences which are based on the research results. The validity of the instruments means the degree to which the instruments are used to measure what they are intended to measure (Orodho, 2008). The study used both face and content validity to ascertain the validity of the questionnaires. As a check on face validity, test or survey items were sent to the pilot group to obtain suggestions for modification (Rousson, Gasser & Seifer, 2002). Content validity will draw an inference from test scores to a large domain of items similar to those on the test. Content validity is concerned with sample-population representativeness. Gillham (2008) stated that the knowledge and skills covered by the test items should be representative to the larger domain of knowledge and skills.

### 3.5.2 Reliability of Instruments

Reliability is a measure of the degree to which a research instruments yields consistent results or data after repeated trials (Mugenda & Mugenda, 2003). The consistency of measurement of the questionnaire was assessed using Cronbach's Alpha method. Cronbach's alpha reliability coefficient normally ranges between 0 and 1, the closer the coefficient is to 1.0; the greater is the internal consistency of the items (variables) in the scale. This was enhanced through a pilot study that was done on four random respondents to ensure reliability of the data to be collected. Reliability of the questionnaire was evaluated by ensuring the questions were aligned to the research objectives. The questionnaires were edited to ensure completeness and consistency.

### 3.6. Data Collection Procedures

The research used primary data which was collected by use of structured questionnaires. Simple sampling technique was used to cover all the geographical areas of the town and its environs, simple random sampling was then be used to approach individual respondents. Four assistants were employed by the researcher to assist in the administering of the questionnaires. The questionnaires were dropped to the target respondents and collected at a later agreed date. The procedure of collecting data began with informing the respondents in advance about the exercise; the researcher explained the objectives of carrying out the study. The data collected using the questionnaires were tested for completeness.

### 3.7. Data Analysis and Presentation

Kothari (2006) refer to data analysis as the resolution of complex into its parts through an analytical process, factors or constituent variables that contribute to the comprehension of a phenomenon or event. Once the data was collected, the researcher edited and counter checked

the completion of questions in order to identify items which were not adequately responded to. Second step in the analysis was to classify and tabulate the information collected. Coding of data was done to convert responses into measurement that could be statistically analyzed; this assisted to identify information that was relevant to the research questions and objectives. The data was edited for accuracy and completeness then analyzed using SPPS (Statistical Package for Social Sciences) and excel. Tables, charts, graphs and percentages were used to present the data for ease of understanding and interpretations. The following regression model was used to establish the relationship between Money saved in the mobile phone and the perception of mobile banking, income of users, adoption of mobile banking and the incentives to save. The variable Y is usually defined as;

$$\mathbf{Y = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \Sigma}$$

Whereby:-

**Y** = Saving practices

$\boldsymbol{\beta_o}$ = Constant

$\mathbf{X_1}$ = Perception of mobile banking

$\mathbf{X_2}$ = Income

$\mathbf{X_3}$ = Adoption of mobile banking services

$\mathbf{X_4}$ = Incentives to save

$\boldsymbol{\Sigma}$ = Error term of the model

**β1, β2, β3** and **β4 =** Coefficients of independent variables

### 3.8 Ethical Considerations

Ethics in research refers to a code of conduct or expected social norm of behavior while conducting research. According to Gakuu (2010), ethical issues are an integral part of the

research planning and implementation process. The researcher in this case treated people with respect and ensured the procedures were reasonable and fairly administered. Full informed consent was obtained and privacy and confidentiality of the research participants was guarded. The researcher explained the real purpose and the use to the research to participants. Marginalized groups were given a voice as a way of having a balanced research work. The information gathered from the participants was kept confidential.

# CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION

## 4.1 Introduction

This study was carried out to establish the effect of mobile banking on the savings practices amongst residents of Kapsabet town, Kenya. Data was collected from the residents by administering questionnaires. The findings are presented as follows;

## 4.2 Response Rate

A total of 196 questionnaires were distributed. Out of the 196 questionnaires, 139 were returned to the researcher correctly filled representing a response rate of 70.9% which was considered sufficient for this study. Mugenda & Mugenda (2003) stipulated 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 high response rate was achieved due to face to face administering of the questionnaires by the researcher and his assistant.

## 4.3 Background Information of the respondents

### 4.3.1 Gender of the respondents

The study sought to establish the respondents' gender distribution. The findings are as shown in the figure below

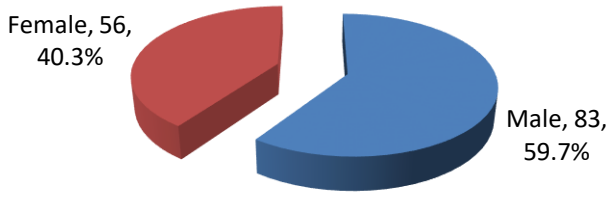



**Figure 4.1: Gender of the respondents**

**Source: Research findings (2019)**

From the findings of the study the respondents were represented by both genders (40.3%) were female while 59.7% were male. The study shows that the majority of mobile phone users were male and this is attributed to access to income.

### 4.3.2 Age of the respondents

The purpose of this analysis was to establish if there is a significant difference in the adoption of mobile banking services based on age. The table below indicates an analysis of the respondent's age distribution.

**Table 4.1: Age of the respondents**

| **Age** | **Frequency** | **Percentage** |
|---|---|---|
| Below 18 | 2 | 1.4% |
| 18-28 | 61 | 44.2% |
| 29-39 | 45 | 32.6% |
| 40-49 | 23 | 16.7% |
| Above 50 | 8 | 5.1% |
| **Total** | **139** | **100%** |

**Source: Research findings (2019)**

Study findings show that majority of the respondents 78.2% were aged between 18 – 40 years old, 16.7% were between 40 and 50 years old while 5.1% were above 50 years of age. The findings indicate that majority of the mobile banking services users fall ages between 18 and 50 years old. This is the group which is educated and have a source of income.

### 4.3.3 Highest level of education

The researcher enquired from the respondents about their education level to establish if there was a significant difference in adoption of mobile banking services based on literacy levels. The results obtained were tabulated as illustrated in the table below

**Table 4.2: Level of education of the respondents**

| Level of education | Frequency | Percentage |
|---|---|---|
| Primary | 14 | 10.1% |
| Secondary | 42 | 30.2% |
| College Diploma | 40 | 28.8% |
| Undergraduate | 35 | 25.2% |
| Postgraduate | 8 | 5.8% |
| **Total** | **139** | **100%** |

**Source: Research findings (2019)**

From the results presented it is evident that majority of respondents had secondary school level of education at 30.2% followed by those with college diplomas and university education at 28.8% respectively while those with post graduate level of education at 5.8%. Therefore majority of respondents for this study have at least secondary school qualification. From the research, it implies that those who were educated owned and a mobile phone and this may be attributed to the ease of use and the trust.

### 4.3.4 Occupation of the respondents

The research also sought to establish respondents' occupation. The findings are as shown in the figure below

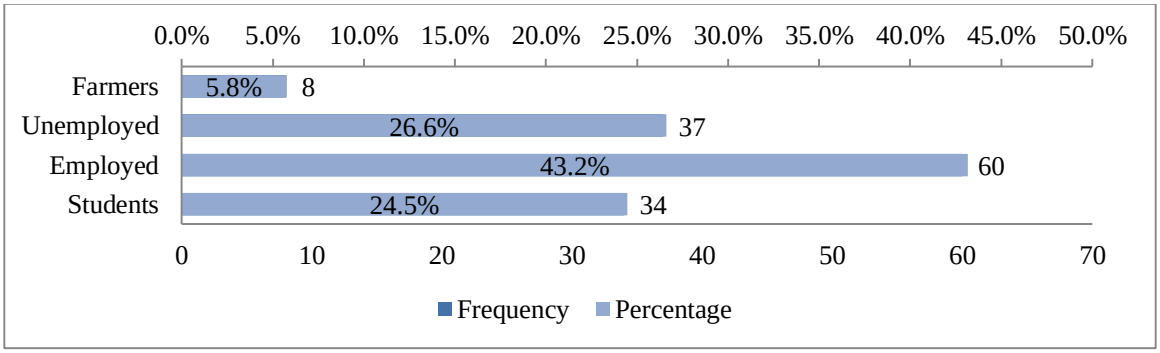



**Figure 4.2: Occupation of the respondents**

**Source: Research findings (2019)**

From the figure above, majority of the respondents 43% were employed, 23% were students and 28% were unemployed. This implies that majority of the study respondents were employees earning wages or salary income.

### 4.3.5 Account Mainly Operated by the Respondents

The research sought to establish the account mainly operated by the respondents. The findings are presented in the table below

**Table 4.3: Account Mainly Operated by the Respondents**

| **Account** | **Frequency** | **Percentage** |
|---|---|---|
| Mobile banking services | 100 | 72.5% |
| Bank account | 39 | 27.5% |
| **Total** | **139** | **100%** |

**Source: Research Findings (2019)**

The above finding shows that majority of the respondents operate the account of Mobile banking services mostly as compared to bank account. Those that operate mobile banking services account for 72.5% while those that operate bank account represent 27.5%.

### 4.3.6 Mobile Service Registered and operated by respondents

The research sought to establish the mobile service registered and operated by the respondents. The findings are demonstrated in the figure below

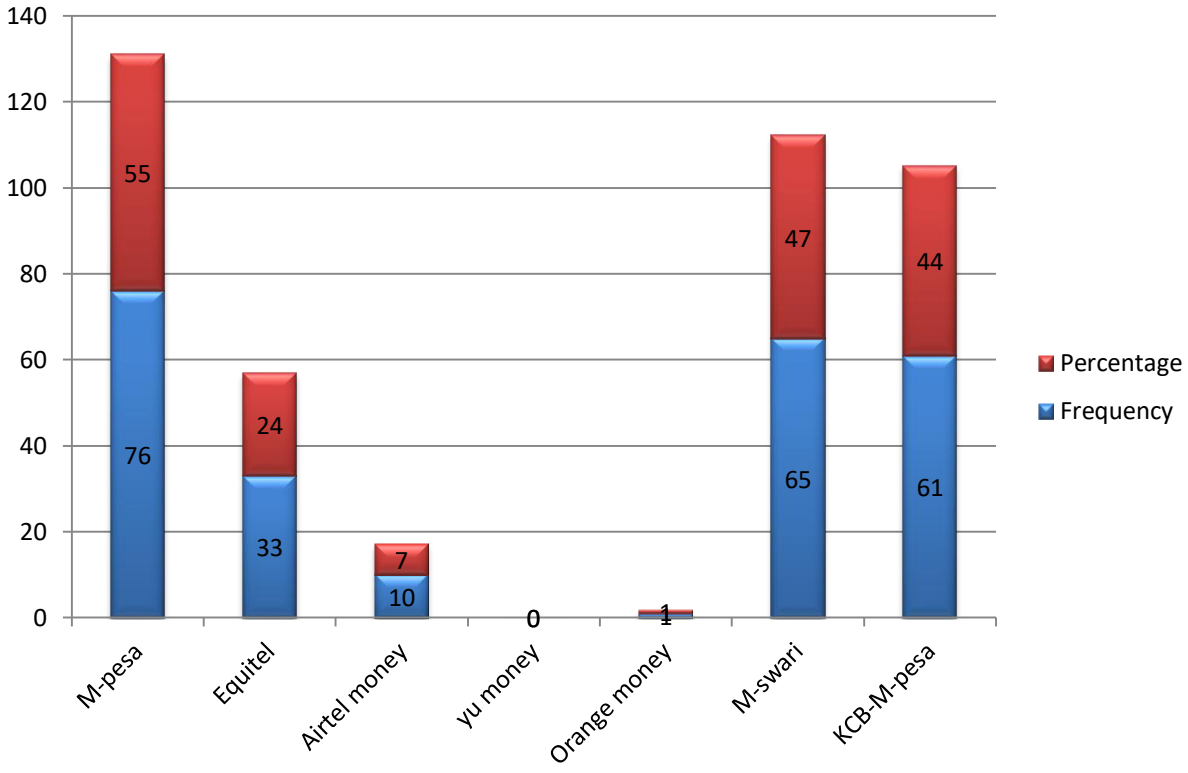



**Figure 4.3 Mobile Service registered by the Respondents**

**Source: Research Findings (2019)**

The above finding shows that majority of those interviewed operate the M-pesa compared to those that operate other mobile services; lowest is orange money with 1%. The above finding shows that majority of those interviewed operate the M-Pesa services. M-Pesa accounts for 55% of the mobile services operated by respondents while M-shwari and KCB-M-pesa accounts for 47% and 44% respectively.

### 4.4 Mobile Banking perception

#### 4.4.1 Cost of using mobile banking

The study sought to establish how respondents perceived the cost of mobile banking services. The findings are as shown in the figure below;

**Table 4.4 Cost of mobile banking services**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| very cheap | 25 | 18.0 | 18.0 |
| Cheap | 48 | 34.5 | 34.5 |
| Neutral | 44 | 31.7 | 31.7 |
| Expensive | 20 | 14.4 | 14.4 |
| very expensive | 2 | 1.4 | 1.4 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

The above finding shows that majority of respondents interviewed perceived mobile banking to be cheap. Those who perceived mobile banking to be cheaper accounted for 34.5% of the respondents, when asked if they thought mobile banking was cheaper than traditional banking services, 130 respondents accounting for 93.5% agreed while 9 (6.5%) respondents disagreed as shown in the table 4.6 below. Those who disagreed were asked to give reasons and majority of them thought mobile banking was insecure and expensive and did not have the confidence to use mobile money services.

**Table 4.5 Cost of mobile banking services versus traditional banking**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| No | 9 | 6.5 | 6.5 |
| Yes | 130 | 93.5 | 93.5 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

### 4.4.2 Overall trust in Mobile Banking services

The study sought to establish respondents overall trust in mobile banking services. The findings are as shown in the figure below;

**Table 4.6 Overall Trust in mobile banking services**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| very low | 7 | 5.0 | 5.0 |
| Low | 14 | 10.1 | 10.1 |
| Average | 51 | 36.7 | 36.7 |
| High | 49 | 35.3 | 35.3 |
| very high | 18 | 12.9 | 12.9 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

From the findings above, 48.2 % of the respondents rated highly that they had trust in mobile banking services and 36.7% had an average trust on mobile banking services.

### 4.4.3 Mobile Banking users trust in Banks

The study sought to establish respondents trust in mobile banking services. The findings are as shown in the figure below;

**Table 4.7 Trust in Banks**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| very low | 4 | 2.9 | 2.9 |
| Low | 7 | 5.0 | 5.0 |
| Average | 55 | 39.6 | 39.6 |
| High | 47 | 33.8 | 33.8 |
| very high | 26 | 18.7 | 18.7 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

From the findings above, 52.5% of the respondents had trust in banking services. 39.6% had average trust in banking services,

### 4.4.4 Mobile Banking users trust in technology

The study sought to establish respondents trust in technology of mobile banking services. The findings are as shown in the figure below;

**Table 4.8 Trust in Technology**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| very low | 3 | 2.2 | 2.2 |
| Low | 10 | 7.2 | 7.2 |
| Average | 53 | 38.1 | 38.1 |
| High | 52 | 37.4 | 37.4 |
| very high | 21 | 15.1 | 15.1 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

From the findings above, 52.5% of the respondents trusted the technology of mobile banking. 38.1% had average trust in mobile banking technology. Most attributed the trust in technology as the main factor that led to adoption of mobile banking services.

### 4.4.5 Mobile Banking users trust in third party agents

The study sought to establish respondent's mobile banking user's trust in third party agents. The findings are as shown in the figure below;

**Table 4.9 Trust in third party agents**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| very low | 19 | 13.7 | 13.7 |
| Low | 19 | 13.7 | 13.7 |
| Average | 45 | 32.4 | 32.4 |
| High | 43 | 30.9 | 30.9 |
| very high | 13 | 9.4 | 9.4 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

From the above findings, 40.3% of the respondents had trust in third party mobile services providers, 32.4% had average trust on use of 3rd party agents.

### 4.4.6 Mobile Banking services security from fraud

The study sought to establish how respondents perceived the security from fraud of mobile banking services. The findings are as shown in the figure below;

**Table 4.10 Security from fraud**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| very low | 6 | 4.3 | 4.3 |
| Low | 15 | 10.8 | 10.8 |
| Average | 45 | 32.4 | 32.4 |
| High | 43 | 30.9 | 30.9 |
| very high | 30 | 21.6 | 21.6 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

From the findings above, 52.5% of the respondents found mobile services to be secure from fraud. 32.4% of the respondents had average thoughts on security from fraud.

### 4.4.7 Ease of use of Mobile Banking services

The study sought to establish how respondents perceived the ease of use of mobile banking services. The findings are as shown in the figure below;

**Table 4.11 Ease of use**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| very low | 2 | 1.4 | 1.4 |
| Low | 8 | 5.8 | 5.8 |
| Average | 25 | 18.0 | 18.0 |
| High | 51 | 36.7 | 36.7 |
| very high | 53 | 38.1 | 38.1 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

From the findings above, 74.8% of the respondents rated highly that mobile banking services were easier to use hence encouraging savings in the mobile phone. 18% rated average that mobile banking was easy to use.

## 4.5 Income of mobile banking users

### 4.5.1 Main source of income

The research sought to identify respondent's sources of income. The findings are as stipulated in the figure 4.6 below. From the findings majority of the respondents were farmers accounting for 34% of those interviewed, 28% were those in various companies and offices as employees, 23% of those interviewed were business persons located in the area covered and 15 % of respondents said they received donations from relatives and well-wishers.

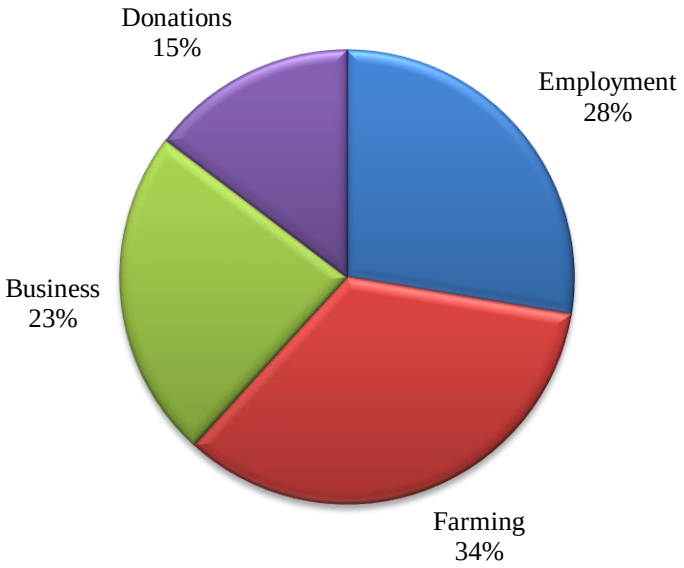



**Figure 4.4 respondents sources of income**

**Source: Research findings (2019)**

### 4.5.2 Average Monthly Income

The research sought to establish respondents' average monthly income. The findings are as stipulated in the figure below

**Table 4.12: Average Monthly Income**

| Average income | <Ksh. 1,000 | Kshs. 1,000-20,000 | Kshs. 21,000-50,000 | >Kshs. 50,000 |
|---|---|---|---|---|
| Respondents | 16 | 78 | 35 | 9 |
| Percentage | 12% | 56.3% | 25.2% | 6.5% |

**Source: Research findings (2019)**

From the results presented it is evident that majority (56.3%) of respondents had an average monthly income of ksh 1,000-ksh 20,000, 25.2% had an average monthly income of ksh 21,000-ksh 50,000 and 12% had an average monthly income of less than Ksh 1,000 while 6.5% had an average monthly income of over ksh 50,000.

### 4.5.3 Saving practices of respondents

The researcher sought to establish how often the respondents saved part of their regular income. The findings are represented in the figure below.

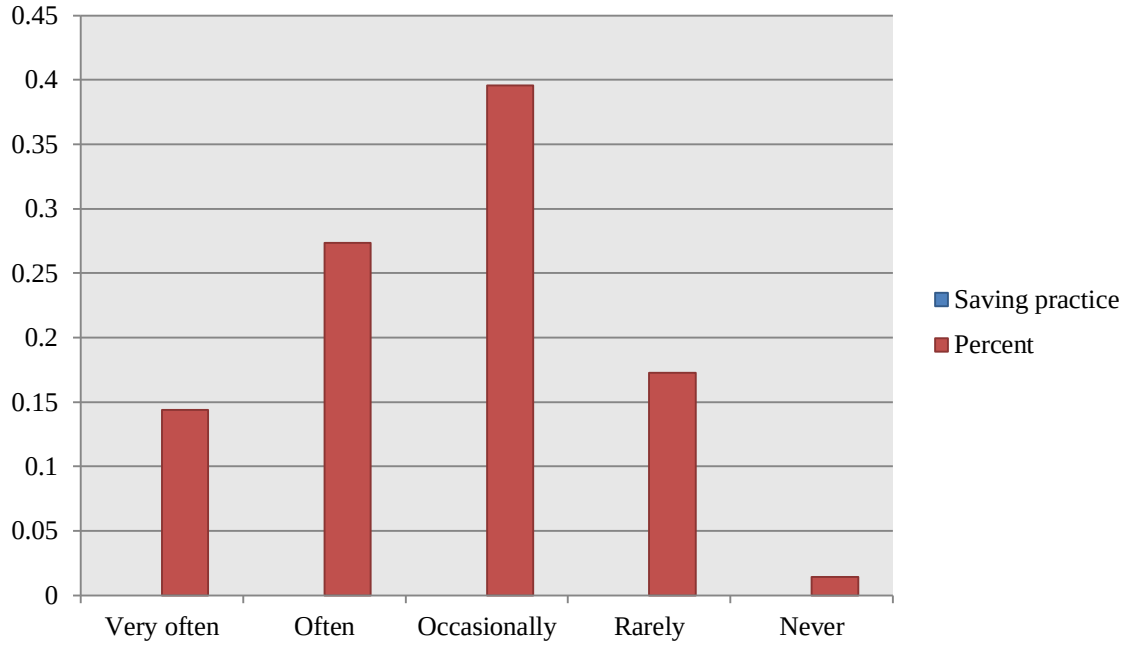



**Figure 4.5 saving practice of respondents**

**Source: Research findings (2019)**

From the findings above 40% of the respondents occasionally saved, 27% saved often, 17% rarely saved and 1% never saved while those who saved had saving very often accounted for 14%. From the study majority of the respondents accounting 41% often saved part of their income.

### 4.5.4 Preferred savings practices

The researcher sought to establish the saving practices preferred by respondent. The findings are shown in the figure below.

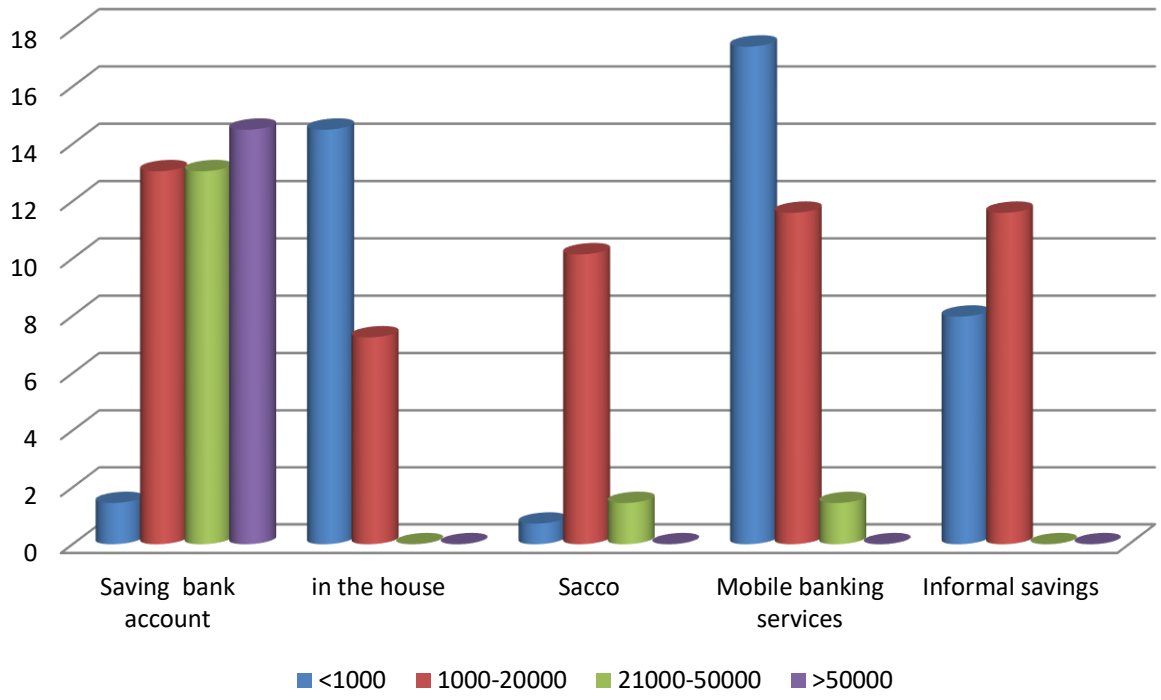



**Figure 4.6 Saving practices by respondents**

**Source: Research findings (2019)**

From the findings illustrated above 17% of respondents with savings less than Kshs. 1,000 used mobile banking, 14% saved at home, 8% saved in informally in chamas while 1% saved in Sacco and ad in the Bank accounts respectively. For respondents with average savings of between Kshs. 1,000-Kshs. 20,000, 13% saved in the banks savings account, 12% in mobile banking, 12% in informal savings, 10% in Sacco's' while 7% saved at home. For respondents with average savings between Kshs. 21,000- Kshs. 50,000, 13% saved in bank savings account, 1% saved in Sacco's while 1% saved in mobile banking. For respondents with average savings above Kshs. 50,000, 14% saved in the bank savings account. From the study majority of the respondents preferred saving either in the bank or mobile banking depending on their income levels , 29% of those saving less than Kshs. 20,000 preferred saving in mobile

banking while 27% of those saving Kshs. 21,000 and above preferred saving in the bank savings account.

### 4.5.5 Statement that mobile banking has improved saving behavior of respondents.

The study endeavored to determine the extent to which the respondents agreed with the statement that using mobile banking has improved their saving behavior / practices. The results are shown below.

**Table 4.13: Extent to which respondents saving practices have improved**

| | Frequency | Percent | Valid Percent |
|---|---|---|---|
| no extent at all | 3 | 2.2 | 2.2 |
| little extent | 8 | 5.8 | 5.8 |
| moderate extent | 46 | 33.1 | 33.1 |
| great extent | 64 | 46.0 | 46.0 |
| very great extent | 18 | 12.9 | 12.9 |
| Total | 139 | 100.0 | 100.0 |

**Source: Research findings (2019)**

From the study findings in Table 4.13, majority of the respondents (46%) agreed to a great extent that mobile banking had improved their saving behavior, 33.1% agreed on a moderate extent, 12.9% agreed to a very great extent, 5.8% agreed to a little extent while 2.2% agreed to no extent at all.

## 4.6 Adoption of mobile banking services

### 4.6.1 Factors affecting adoption of mobile banking

The study sought to determine the factors that were most important to the respondents in the adoption of mobile banking. The responses were rated on a five point likert scale where: 1-

least important to 5- most important. The mean and standard deviations were generated from SPSS and are as illustrated in the table below.

**Table 4.14 Factors affecting adoption of mobile banking services**

| Factors important to adoption of mobile banking | Mean | Standard Deviation |
|---|---|---|
| 1. Security concerns/risky | 3.78 | 1.266 |
| 2. Privacy | 4.11 | 1.184 |
| 3. Reliability | 4.08 | 1.142 |
| 4. Cost | 3.83 | 1.233 |
| 5. Perceived usefulness | 3.88 | 1.192 |
| 6. perceived ease of use | 4.27 | 0.984 |

**Source: Research findings (2019)**

From the study findings in table 4.14, majority of the respondents thought the following factors were important in the adoption of mobile banking services ; reliability, privacy and perceived ease of use as indicated by the mean scores of 4.08, 4.11 and 4.27 respectively. On the other hand, some of the respondents thought the following factors were less important in the adoption of mobile banking services; Security concerns and risks, perceived usefulness and cost as indicated by mean scores of 3.78, 3.88 and 3.83 respectively.

### 4.6.2 Benefits of using Mobile Banking

The study sought to ask respondents to rate the following benefits of using mobile banking. The responses were rated on a five point Likert scale where: 1- being lowest and 5 being highest. The mean and standard deviations were generated from SPSS and are as illustrated in table below.

**Table 4.15 Benefits of using Mobile Banking**

| Benefits of mobile banking | Mean | Standard deviation |
|---|---|---|
| 1. Cost saving | 3.39 | 1.032 |
| 2. Time saving | 4.20 | 0.894 |
| 3. Accessibility | 4.39 | 0.944 |
| 4. Physical security | 4.12 | 1.022 |
| 5. Payment of bills | 4.08 | 1.008 |

**Source: Research findings (2019)**

From the study findings in Table 4.15, majority of the respondents rated highly that mobile banking was a safe place to save as there was no need to carry cash, transaction time was fast and quick, mobile banking could be accessed anytime and mobile banking was convenient in payment of bills as indicated by the mean scores of 4.08, 4.20, 4.39 and 4.08 respectively. On the other hand, most of the respondents moderately agreed that mobile banking had cost saving benefits since the transaction fees were high as indicated by a mean score of 3.39.

## 4.7 Incentives to use mobile banking saving services

### 4.7.1 Statement on Mobile Banking preference for saving

The study sought to establish the extent to which the features of mobile banking as far as its preference for saving. The mean and standard deviations were generated from SPSS and are as illustrated in table below.

**Table 4.16 Preference of using Mobile Banking**

| Features of mobile banking | Mean | Standard deviation |
|---|---|---|
| Convenience to save | 3.53 | 0.887 |
| Secure | 3.83 | 0.945 |
| Convenience to transact | 4.10 | 0.831 |
| Faster | 4.20 | 0.921 |
| Cheaper | 3.58 | 1.086 |
| Earnings from savings | 3.33 | 1.228 |
| Access to credit | 3.80 | 1.110 |

**Source: Research findings (2019)**

From the study findings in Table 4.16, majority of the respondents agreed to a very great extent that they preferred use of mobile banking because of convenience to transact and speed of processing as indicated by the mean of 4.10 and 4.20 respectively. Most of the respondents agreed to a great extent that they preferred mobile banking because ; it is secure and easy access to credit as indicated by the mean scores of 3.83 and 3.80 respectively. Some of the respondents however found mobile banking not to cheaper, not convenient for savings and limited earnings from savings as indicated by a lower means of 3.58, 3.53 and 3.33 respectively.

### 4.7.2 Statement on Mobile Banking versus Traditional Banking

The study sought to determine the level of agreement to which the respondents agreed with the following statements on Mobile Banking Convenience, That mobile banking has made saving easier as compared to using the traditional banking. The results are in figure 4.7 below

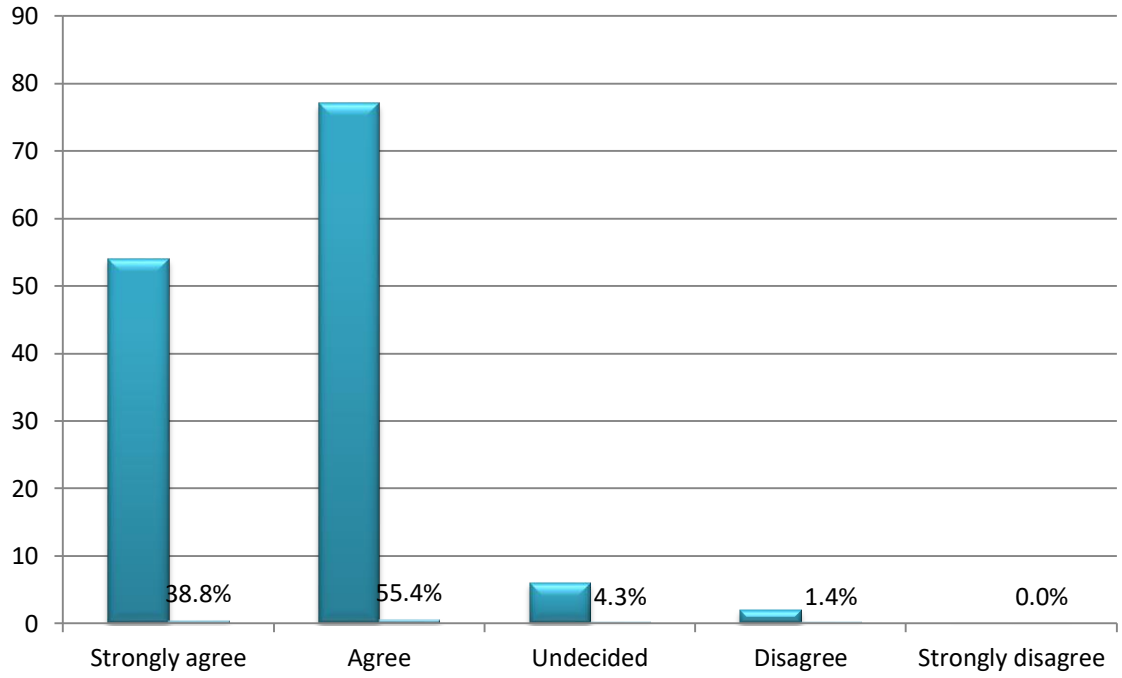



**Figure 4.7 Mobile banking versus Traditional banking**

**Source: Research findings (2019)**

From the study findings in Table 4.7, majority of the respondents (94.2%) agreed that mobile banking has made it easier for them to save compared to traditional banking system. The respondents were asked how they saved their money and to give a comparison of the two banking modes, most of them preferred mobile banking account because of easy access and usage.

### 4.7.3 Features of mobile banking influencing saving

The study sought to establish the extent to which the features of mobile banking as far as its incentives to save influenced respondent's mobile savings. The findings are as stipulated below:

**Table 4.17 Features of mobile banking influencing saving**

| Features influencing saving practices | Mean | Standard deviation |
|---|---|---|
| Avoids unnecessary and trivial expenditures | 3.76 | 1.128 |
| Enables time saving, energy and cost of transacting | 4.05 | 1.031 |
| There is low withdrawal fees | 3.43 | 1.174 |
| it helps me plan my spending | 3.40 | 1.061 |
| There is upper limit on transactions thus limiting expenditure | 3.28 | 1.142 |

**Source: Research findings (2019)**

From the study findings in Table 4.17, majority of the respondents agreed to a very great extent that mobile banking saves time, energy and cost of visiting bank hall as indicated by the mean score of 4.05.Some respondents agreed to a great extent that mobile banking helped in avoiding unnecessary and trivial expenditures as indicated by the mean of 3.76.Some of the respondents agreed to a moderate extent that mobile banking had low withdrawal fees on the mobile banking platform and helped them plan their spending as indicated by a mean of 3.43 and 3.40 respectively. Some respondents agreed to a less extent that an upper limit on transactions was not as important as far as incentives to save as indicated by the mean scores of 3.28.

### 4.8 Regression analysis

The total amount of money saved in the mobile phone was regressed against the four independent variables namely; perception of mobile banking, income, adoption of mobile banking and incentives to save.

### 4.8.1 Regression coefficients for the independent variables

**Table 4.18 Regression coefficients for the independent variables**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 4.657 | .645 | | 7.215 | .000 |
| | Income sources | -.111 | .046 | -.196 | -2.390 | .018 |
| | Perception of mobile banking | -.209 | .061 | -.279 | -3.449 | .001 |
| | Adoption of mobile banking services | -1.696 | .518 | -.266 | -3.271 | .001 |
| | Incentives to save | .354 | .132 | .219 | 2.676 | .009 |

a. Dependent variable: Saving practices

**Source: Research findings (2019)**

Note: Standardized coefficients are used to formulate the equation.

$Y = aX_1 + bX_2 + cX_3 + dX_4 + e$

Saving practices = -.196*income sources + -.279*perception of mobile banking + -.266* adoption of mobile banking services + -.219* incentives to save

The above equation is significant since P-values of the variables are less than 0.05.

### 4.8.2 Analysis of Variance (ANOVA)

**Table 4.19 Analysis of variance**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 27.341 | 4 | 6.835 | 8.834 | .000[b] |
| | Residual | 92.078 | 119 | .774 | | |
| | Total | 119.419 | 123 | | | |

a. Dependent variable: Saving practices

The sig. < .01, this means the model is significant at 99% confidence to explain the dependent variable.

### 4.8.3 Model Summary

**Table 4.20 Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .478[a] | .229 | .203 | .880 |

**Source: Research findings (2019)**

a. Predictors: (Constant), Adoption of mobile banking services , incentives to save, Perception of mobile banking, income sources

The model summary table represents entry of where they save regular income, which shows that 22.9% of the variance is explained by the model.

### 4.9 Measurements Reliability Test using Cronbach's Alpha

Cronbach's Alpha test was used to estimate the reliability, or internal consistency of the items included in the factor. This test was done to ensure the measurements are reliable for future use.

**Table 4.21 Reliability statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| 0.836 | 4 |

**Source: Research findings (2019)**

From the study findings Cronbach's Alpha score is 0.836 which indicates a high level of internal consistency of the measurement scales. The result above is greater than 0.7 hence it is okay.

$\alpha \geq 0.9$ excellent

$0.9 > \alpha \geq 0.8$ Good

$0.8 > \alpha \geq 0.7$ acceptable

### 4.9 Interpretation of the findings

The study was aimed at establishing the effect of mobile banking on the saving practices amongst residents of Kapsabet town. This study examined how residents perceived and adopted mobile banking and how mobile banking has had an effect on their saving practices.

The study findings in table 4.1 show that mobile banking services is mostly operated by youth aged 18-28 years, however the majority of its users range from 18-50 years. The study findings above show that mobile banking services are widely used by people across all ages.

The findings in table 4.3 shows that majority of the residents operate mobile banking accounts more than the bank accounts. This is because of the accessibility and convenience of having a mobile phone and easy connection to the mobile banking services.

To establish the perception of residents on the cost of mobile banking, the findings in table 4.4 and 4.5 shows that residents found mobile banking services cheaper as compared to other traditional banking services. To establish the overall trust on mobile banking by the residents, findings in table 4.6 show that the residents trusted the use of mobile banking services as they trusted the traditional banking services as shown in table 4.7 and equally had trust in the mobile banking technology as shown in table 4.8. In table 4.9 the residents demonstrated that they had trust in third party agents who provide mobile banking services. The findings in table 4.10 show that the residents believed that mobile banking was secured from the risks of fraudulent activities. The finding in table 4.11 shows that the residents found mobile banking services easy to use.

The study finding in figure 4.4 and table 4.12 show that resident's income was mostly from farming and employment with regular income of between Kshs. 1,000-20,000. The study

finding in table 4.13 shows that the residents believed to a great extent that mobile banking had improved their saving behavior.

The study findings in figure 4.2 shows most residents were employees. Those earning between Kshs 1,000 -50,000 saved in the phone while those earning above Kshs. 50,000 save more in the bank savings account. Most residents perceived mobile banking as trustworthy and secure and therefore preferred to save in the phone as shown in table 4.7 and table 4.11. Those residents who adopted mobile banking found it easy and convenient and there were benefits associated with saving in the mobile banking platform as shown in table 4.17.

The study findings in table 4.18 shows that there is a statistically significant effect between the saving practices and the income sources, perception of mobile banking services, adoption of mobile banking services and the incentives to save available to Kapsabet town residents. The independent variables have significant association with the saving practices of Kapsabet town residents.

In the study findings in table 4.19 the independent variables; income sources, perception of mobile banking, adoption of mobile banking services and the incentives to save all have 99% confidence to explain the dependent variable; saving practices.

# CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter covers the summary of the findings, and the conclusions and recommendations of the study based on the objectives of the study. The main objective of this study was to establish the effect of mobile banking on saving practices amongst residents of Kapsabet town, Kenya.

## 5.2 Summary

The study endeavored to establish the effect of mobile banking on saving practices amongst residents of Kapsabet town, Kenya. The study was able to establish through a survey done by administering questionnaires that majority of the respondents were male aged between 18 and 49 years old and had at least secondary school qualifications.

### 5.2.1 Effect of perception of savings through mobile phone on saving practices

On Mobile Banking Safety, the study found out that the safety and trust worthiness of mobile banking influenced respondent's mobile savings to a great extent. Further, the study found out there was no risk of losing from theft or deception when using mobile banking; mobile banking was reliable because it was a bank account and mobile banking was trustworthy because the customer alone can access their account.

### 5.2.2 Effect of income on saving practices

Further, majority of the respondents were employed with average monthly income of ksh 1,000-ksh 50,000. Most of the respondents had both employment income and other income from farming activities and business. The study established that those earning between Kshs. 1000 and Kshs 20,000 saved more in the mobile banking platform.

### 5.2.3 Effect of adoption of mobile banking on saving practices

On features of using Mobile Banking, the study established that mobile banking was a safe place to save; transaction time was fast and quick and mobile banking had the capacity to save without others' knowledge. On Mobile Banking Convenience the study found out that features of mobile banking as far as convenience in savings influenced respondent's mobile savings to a great extent. On the other hand, mobile banking was a good substitute to bank account; there were prompt updates through messages in mobile banking and the agent gives money even if the bank counter is closed.

### 5.2.4 Effect of incentives to save on saving practices

On Mobile Banking Incentive to save the study established that that the features of mobile banking as far as its incentive to save influenced respondent's mobile savings to a great extent. On the other hand, mobile banking helped them plan their spending; helped them in avoiding unnecessary and trivial expenditures; there was low withdrawal fees on the mobile banking platform; mobile banking enabled in saving time, energy and cost of transacting in traditional bank branch and there was an upper limit on transactions.

On saving practices, the study established that the saving practices of residents had improved to a great extent mainly due to easy access to saving platform due to the convenience of having the savings services at the palm of their hands. Majority of the residents with low wages and income saved often in the mobile phone while those with higher income levels accessed and saved the money in the traditional banking systems.

The saving practice of regular income was regressed against the four variables. Data was collected and the findings in the model summary indicated that the saving practices of the

residents are indeed dependent on the income levels, perception, adoption and benefits of mobile banking services.

The study achieved the intended objective of establishing the effect of mobile banking services on saving practices. It was established that most residents in Kapsabet town preferred saving using the mobile banking platform mainly due to the cost, ease of use, security, benefits accruing thereof and the convenience provided by the new mobile banking services. 72.5% of the residents operated mobile banking account compared to 27.5% who operated a bank account.

### 5.3 Conclusions

The study concluded that mobile banking has an effect on the saving practices; this was made possible by the improved technology on both devices and on the mobile money services. Kapsabet town residents were using mobile money for different purposes including online purchasing, payment of bills, receiving payment, payment of goods and services, savings as well as money transfer, which significantly influenced their saving practices. With further improvement in the mobile money technology and the reduced costs together with improved accessibility the uptake of mobile banking services will greatly expand to the entire population.

### 5.4 Recommendations

The implication of the findings from this study for policy is that the mobile banking services providers and other stakeholders should adopt appropriate policies to facilitate use of mobile money by Kenyan citizens. One of such policies that could help to foster use of mobile money among citizens to improve savings is removal of taxes on mobile money transactions. Communication Authority of Kenya (CAK), which regulates mobile money services, and the

Central Bank of Kenya (CBK), which regulates the banking industry, should formulate clear regulations to ensure smooth running of mobile money services. Such measures will guarantee safety of mobile money services and eliminate risk as a barrier to adoption and usage among citizens. Service providers particularly those providing lending services should be closely monitored to avoid exploitations though charging high interest rates.

The service providers could develop mobile banking services similar to Sacco where the users can be encouraged to save in groups and guarantee each other so as to access credit, this will encourage savings and at the same time encourage borrowing.

It also recommended that the mobile money service providers develop programs that will be promote savings. Currently, most providers concentrate in lending as opposed to savings

**5.6 Recommendation for Further Research**

There is room to carry out further research as to the consistency of savings through the mobile phone, Most users save only to access credit and it would be of greater use if policy makers were to further study the extent to which users of mobile banking services have embraced savings for future use and also savings for insurance use.

Further research could also answer the following question: what factors influence users' choice of mobile money/banking services provider?

## REFERENCES


Alexandre, C., & Almazán, M. (2012).From cash to electronic money: *Enabling new business model to promote financial inclusion and integrity*. In J. Osikena (ed).

Anjana R. and Eric T. *Savings for the poor in Kenya*, May 2012, New American Foundation.

Bagozzi, R.P. (2007): "The legacy of the technology acceptance model and a proposal for a paradigm shift.": Journal of the Association for Information Systems

Bankable Frontier Associates (BFA).(www.bankablefrontier.com) and Digital Divide Data DDD). Kenya. (http://www.digitaldividedata.org/kenya/). Accessed 18th May 2016.

Banerjee, Abhijit V. and Esther Duflo. 2007. "The Economic Lives of the Poor." Journal of Economic Perspectives 21(1):1–22.

Bryman and Bell (2003), is the resource-based 'view' a useful perspective for strategic management research? *The Academy of Management Review*, 26(1), 22-40

Burt, R. S. (2002). Structural holes: The social structure of competition. Cambridge: Harvard University Press Celent (2007), "Studies of Effective Technology Usage".

Central Bank of Kenya http://www.centralbank.go.ke/ Accessed 10th January 2016.

Ching M. C. Chuan, A. T., Sim, J. J. Kam, H. and Tan, B. (2011) Factors Affecting Malaysian Mobile Banking Adoption: An Empirical Analysis, International Journal of Network and Mobile Technologies, Vol 2 / Issue 3

Cooper, D and Emory, C. (1995) Business Research Methods. Chicago. Irwin Creswell, John W.(2014) *Research design : qualitative, quantitative, and mixed methods approaches* / John W. Creswell. — 4th ed., Los Angeles, Sage Publications,

Data on bank branches come from the IMF Financial Access Survey (FAS) Database. Available at http://data.imf.org/

Datta, A., Pasa, M., & Schnitker, T. (2001). Could mobile banking go global? The McKinsey Quarterly, 71-80.

Davis, F. D. (1989): "Perceived usefulness, perceived ease of use, and user acceptance of information technology": MIS Quarterly

Demombynes, Gabriel and Aaron Thegeya. 2012. “Kenya’s Mobile Revolution and the Promise of Mobile Savings.” *World Bank Policy Research Working Paper 5988*.

Drexelius K, Herzig M. Mobile banking and mobile brokerage –Successful Applications of Mobile Business? *International management & Consulting.* 2001;16(2):20-23

Dupas, Pascaline and Jonathan Robinson. 2013b. “Why Don’t the Poor Save More? Evidence from Health Savings Experiments.” American Economic Review 103:1138

Dupas, Pascaline, Sarah Green, Anthony Keats, and Jonathan Robinson. 2012. “Challenges in Banking the Rural Poor: Evidence from Kenya’s Western Province.” NBER Working Paper No. 17851.

Finextra, 18 October 2014, “Equity Bank to take on M-PESA with Thin SIM technology”, available at http://www.finextra.com/news/fullstory.aspx?newsitemid=26548

FSD Kenya, Central Bank of Kenya.“FinAccess National Survey 2013.” October 2013.

FSD & CBK, Financial Inclusion in Kenya, Page 156, 2011

Gakuu, C.M. (2010). Project Design amd Implementation. *Master in project planning and management, Distance Learning study Module,* University of Nairobi.

Gillham, B. (2008). *Observation Techniques*: Structured and Unstructured. Continuum International: London and New York.

GSMA (2015). State of the Industry Report: Mobile Money (online) London: GSMA. Available at http://www.gsma.com/mobilefordevelopment/wpcontent/uploads/2016/

Group Special Mobile Association (GSMA), 2014.

Haas, S., Plyler, M., & Nagarajan, G. (2010). Outreach of M-PESA System in Kenya: Emerging Trends. Washington, DC: IRIS and Microfinance Opportunities.

Invested Development, Research brief, 'Improving informal savings groups with mobile technology', spring 2012

Ivatury, Mas. (2008). Harnessing technology to transform financial services for the poor. *Small Enterprise Development, 15*(4), 25-30.

Jack, W. and T. Suri (2011). The Economics of M-PESA: An Update.3. http://www.georgetown.edu/faculty/wgj/papers/M-PESA_Update.pdf.

Kennedy Waweru and John Kamau, Journal of business studies quarterly,2017, Vol 8, No. 3 .accessed 4th April 2017

Kenya National Bureau of Statistics (2014) 2012 Kenya Population and Housing 8.Census Vol 1c. Nairobi: Kenya National Bureau of Statistics.

Koivu,T.(2002),"Do efficient banking sectors accelerate economic growth in transition countries?"

Kothari C.R (2006).*Research Methodology methods and techniques* New Delhi: new age international publishers.

Lahiri A. (1989), 'Dynamics of Asian Savings: The Role of Growth and Age Structure', IMF Staff Papers. 36: 228-61.

Love, I., 2011. Empirical Analysis of Corporate Savings in Egypt. *Policy Research Working Paper Series* 5634. The World Bank.

Lyman T, Porteous D, and Pickens M, 2008, Regulating Transformational Branchless Banking: Mobile Phones and Other Technology to Increase Access to Finance." Focus

Note 43.Washington, D.C.: CGAP.

Macharia, J., & Okunoye, A. (2013). Mobile Banking Influence on Wealth Creation for the Unbanked. International Conference on ICT for Africa 2013. Harare. Available at: http:// erepo.usiu.ac.ke/bitstream/handle/

Mas, I.and Radcliffe,D.(2010),Branchless and Mobile Banking Solutions for the Poor.

Mas, Ignacio. 2010. "Savings for the Poor." World Economics 11(4):1–12.

Mbiti, I & Weil, D.N. (2014), Mobile Banking: The Impact of M-Pesa in Kenya. NBER Working Paper No. 17129. Available at: http://www.nber.org/chapters/c13367.pdf [Accessed March 28, 2017]

McMillan & Schumaker (2001); Non-enforceable implementation of enterprise mobilization: and exploratory study of the critical success factors, *Industrial Management & Data Systems*, 105 (6), 786-814.

Morawczynski,O.(2009).Exploring the usage and impact of transformational mobile financial services: the case of M-PESA in Kenya, Journal *of Eastern African Studies* 3,no.3:509–525.

Morawczynski, Olga. 2009. "Saving Through the Mobile Phone - The Case of M-PESA." *Micro Banking Bulletin* (19):7–14.

Mugenda, A &Mugenda,O (2003), Research methodology Quantitative and qualitative Approaches, Nairobi.

Muthiora, B. (2015), Enabling Mobile Money Policies in Kenya Fostering a Digital Financial Revolution. Mobile for Development Impact. Available at: www.itu.int/en/ITU-T/ focusgroups/dfs/Documents/2015_MMU_Enabling-Mobile-Money-Policies-in-Kenya.pdf. [Accessed March 28, 2017]

Nandhi, M.A. (2012). "Effects of Mobile Banking on the savings practices of low income users. The Indian Experience. Institute of Money, Technology and Financial Inclusion". Working Paper 2012-7.

Ngechu. M. (2004). Understanding the research process and methods. An introduction to research methods. Acts Press, Nairobi.

Orodho John A. (2008) *Techniques of writing Research proposals and reports*: In education and social sciences. Masola Printers . Nairobi.

Porteous, D.(2006), "The Enabling Environment for Mobile Banking in Africa". Device use and adoption. Savings. Policy Research Working Paper, World Bank,

Ravallion,(1993) Branchless Banking Models. United Nation Publications Bangkok. Safaricom offices (Kenya) Department of Mpesa.

Reed, M., Jotischky, N., Newman, M., Mbongue, T.,& Escofet, G. (2014). Africa telecoms outlook: Maximizing digital service opportunities.

Rousson, V Gasser, T, Steifert, B. (2002). Assessing Intratater, Interrater and Test- retest Reliability and continuous measurements. Stat- Med, 21 (22): 31-46

Safaricom website: http://www.safaricom.co.ke/personal/M-pesa, Accessed 15th June 2016.

Sameroynina, Y. (2005), 'Consumption and Saving Behavior in Russia', The Economics of Saving Kluwer Academic Publishers, London.

Simone di Castri (2013), "Tiered risk-based KYC: M-Shwari successful customer due diligence",GSMA, available at http://www.gsma.com/

Sohail, M. and Shanmugham, B. (2003) E-banking and customer preferences in Malaysia: An empirical investigation, Information Sciences, Vol. 150, No. 3/4: 207-217, 2003.

Strydom, P. (2007) Savings behaviour by South African Households. First National Bank.

Tchouassi, G. (2012) Can Mobile Phones Really Work to Extend Banking Services to the Unbanked? Empirical Lessons from Selected Sub-Saharan Africa Countries, International journal of Development Societies, Vol. 1, No. 2, 2012, 70-81

Tiwari, R. Buse, S and Herstatt, C. (2006) Mobile Banking As Business Strategy: Impact of Mobile Technologies On Customer Behavior And Its Implications For Banks. Working Paper No. 37.

Tobbin, P. (2012). Towards the model of adoption in mobile banking by the unbanked: a qualitative study, 14 (5),74-88.

Turnham, J.(2010). Attitudes to savings and financial education among low-income Populations. Findings from the financial literacy focus groups. *Working Paper WP* 10 ILO 2016: Poverty reduction through small enterprises

W. Paul, Dianna C. Gardner, and Lynne M. Haeffele. *When to Use What Research Design*. New York: Guilford, 2012.

World Bank. Global Financial Inclusion Index – Kenya, Tanzania, Rwanda, Uganda, 2011-2014.

## APPENDIX IV: QUESTIONNAIRE

Please give answers in the space provided and tick (√) in the box that matches your response to the questions on the Effect of mobile banking on saving practices among residents of Kapsabet town, Kenya.

**Section A: Demographic Characteristics of Respondents**

| | | | | | |
|---|---|---|---|---|---|
| NAME[optional] | | | | | |
| Gender | Male | | Female | | |
| Age[years] | Below18 | 18-28 | 29-39 | 39-49 | Above50 |
| Level of education | Primary school | | | | |
| | Secondary school | | | | |
| | College diploma | | | | |
| | Undergraduate | | | | |
| | Postgraduate | | | | |
| Occupation | Student | | | | |
| | Employed on Salary/wage | | | | |
| | Unemployed | | | | |
| | Other ( specify) | | | | |

1. (a) Do you have a mobile phone?( *Tick where appropriate)*

Yes [ ] No [ ]

(b) Please explain your answer above on the type of phone

2. Do you use your mobile phone for any financial/banking transactions? (*Tick where appropriate)*

Yes [ ] No [ ]

3. If yes, Which of these mobile money services are you registered?*(Tick appropriately; you may tick more than one)*

i. M-PESA [ ] ii. Equitel [ ] iii. Airtel Money [ ]

iv. Yu Money [ ] v. Orange Money [ ] vi. M-Shwari [ ]

vii. KCB-MPESA [ ]

4. Do you have a bank account?

Yes [ ] No [ ]

5. If yes, which of the two accounts do you operate more often?

Mobile banking service [ ] Bank Account [ ]

**Section B: Mobile banking perception**

6. On a scale of 1 to 5, 1 being Very cheap and 5 being Very Expensive, do you find mobile banking service to be cheap or expensive?

| | Very Cheap | Cheap | Not Very Cheap and Not Very Expensive | Expensive | Very Expensive |
|---|---|---|---|---|---|
| Cost | 1 | 2 | 3 | 4 | 5 |

7. (a). Do you think Mobile banking services are cheaper than traditional banking services?

Yes [ ] No [ ]

(b) You said you don't think that the Mobile Banking Services are cheaper than the traditional Banking Services; can you please tell me why do you say so?

8. On a scale of 1 to 5, 1 being the lowest and 5 being the highest, please rate your view on mobile banking service?

| | | Rating Scale | | | | |
|---|---|---|---|---|---|---|
| | | Very Low | Low | Average | High | Very High |
| 1 | Overall Trust | | | | | |
| 2 | Trust in banks | | | | | |
| 3 | Trust in the technology of mobile banking | | | | | |
| 4 | Trust in third party agent (e.g., pay outlet, cash-out point) | | | | | |
| 5 | Security from fraud | | | | | |
| 6 | Ease of use | | | | | |

**Section C: Income of mobile banking users**

9. What who you say is your main income sources (√) where appropriate

Employment income [ ]

Farm produce income [ ]

Business income [ ]

Receipts from relatives [ ]

10. What extent do you access any of the above income through your mobile banking services?

| | No extent at all | Little extent | moderate | Great extent | Very great extent |
|---|---|---|---|---|---|
| Employment income | | | | | |
| Farm produce income | | | | | |
| Business income | | | | | |
| Receipts from relatives | | | | | |

**Section D: Saving practices**

11. How often do you save a part of your regular income? *Tick only once.*

Very often [ ]

Often [ ]

Occasionally [ ]

Rarely [ ]

Never [ ]

12. Where do you save you money? (Tick appropriately; you may tick more than one)

i. Savings Bank Account [ ]

ii. In the house [ ]

iii. Sacco [ ]

iv. In the phone [ ]

v. Informal Groups- Chamas [ ]

13. On average, how much do you save in a month by using the bank, SACCO account (Amount in Kshs) *please tick only one.*

Less than1000 [ ]

1,000-20,000 [ ]

21,000-50,000 [ ]

More than50,000 [ ]

14. On average, how much do you save in a month through mobile money? Amount in Kshs) please *tick only one*

Less than1000 [ ]

1,000-20,000 [ ]

21,000-50,000 [ ]

Morethan50,000 [ ]

15. To what extent do you agree that using mobile banking has improved your saving behavior/ practices?

No extent at all [ ]

Little extent [ ]

Moderate extent [ ]

Great extent [ ]

Very great extent [ ]

**Section E: Adoption of mobile banking services**

16. Which factors do you think are most important in the adoption of mobile banking? Rank as follows (1- most important to 6 least important) according to your concerns wen using mobile banking services.

| **Rank** | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Security concern/ Risky | | | | | | |
| Privacy | | | | | | |
| Reliability | | | | | | |
| Cost | | | | | | |
| Perceived usefulness | | | | | | |
| Perceived ease of use | | | | | | |

17. On a scale of 1 to 5, 1 being the lowest and 5 being the highest, how would you rate the following benefits of Mobile Banking?

| | | **Rating Scale** | | | | |
|---|---|---|---|---|---|---|
| | | Very Low | Low | Average | High | Very High |
| 1 | Cost saving (Lower rates, transaction fees) | | | | | |
| 2 | Time saving (no need to go to bank or ATM) | | | | | |
| 3 | 24 h Access (can make transaction any time) | | | | | |
| 4 | Physical security (no need to go out with cash) | | | | | |
| 5 | Others (please specify)____ | | | | | |

**Section F: Mobile Banking Incentive to save**

18. To what extent has the following made you prefer to use of Mobile money?

| | No extent at all | Little extent | moderate | Great extent | Very great extent |
|---|---|---|---|---|---|
| Convenience to save | | | | | |
| Secure | | | | | |
| Convenience to transact | | | | | |
| Faster | | | | | |
| Cheaper | | | | | |
| Earnings from savings | | | | | |

19. What is your level of agreement that mobile banking has made saving easier as compared to using the traditional banking? *Please tick only one*

Strongly agree [ ]

Agree [ ]

Undecided [ ]

Disagree [ ]

Strongly disagree [ ]

20. Below are some of the features of mobile banking as far as its incentive to save. Please indicate the extent to which the same characteristic influences your mobile savings

Key: 5) Very great extent ( ) 4) Great extent ( ) 3) Moderate extent ( )

2) Low extent ( ) 1) Very low extent ( )

| | **Statement** | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|
| 1 | Avoids unnecessary and trivial expenditures | | | | | |
| 2 | Enabling save of time, energy and cost of transacting in a commercial bank branch | | | | | |
| 3 | There is low withdrawal fees on my mobile banking platform | | | | | |
| 4 | It helps me plan my spending | | | | | |
| 5 | There is upper limit on transactions | | | | | |

Thank You!

## APPENDIX V: LETTER OF RESEARCH PROJECT APPROVAL

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 4150

Internal Memo

FROM: Dean, Graduate School

DATE: 21st May, 2018

TO: Peter Kibet Goin
C/o Accounting and Finance Dept.

REF: D53/OL/23070/2012

SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL

This is to inform you that Graduate School Board at its meeting of 9th May, 2018 approved your Research Project Proposal for the M.B.A Degree Entitled, **"Effect of Mobile Banking on Saving Practices among Residents of Kapsabet Town, Kenya".**

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

HARRIET ISABOKE
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Accounting and Finance.

Supervisors:

1. Mr. Ambrose Jagongo
   C/o Department of Accounting and Finance
   Kenyatta University

*HI/lnn*

## APPENDIX VI: LETTER OF RESEARCH AUTHORIZATION

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: D53/OL/23070/2012

DATE: 21st May, 2018

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR PETER KIBET GOIN – REG. NO. D53/OL/23070/2012.

I write to introduce Mr. Peter Kibet Goin who is a Postgraduate Student of this University. He is registered for M.B.A degree programme in the Department of Accounting and Finance.

Mr. Peter intends to conduct research for a M.B.A Project Proposal entitled, "Effect of Mobile Banking on Saving Practices among Residents of Kapsabet Town, Kenya".

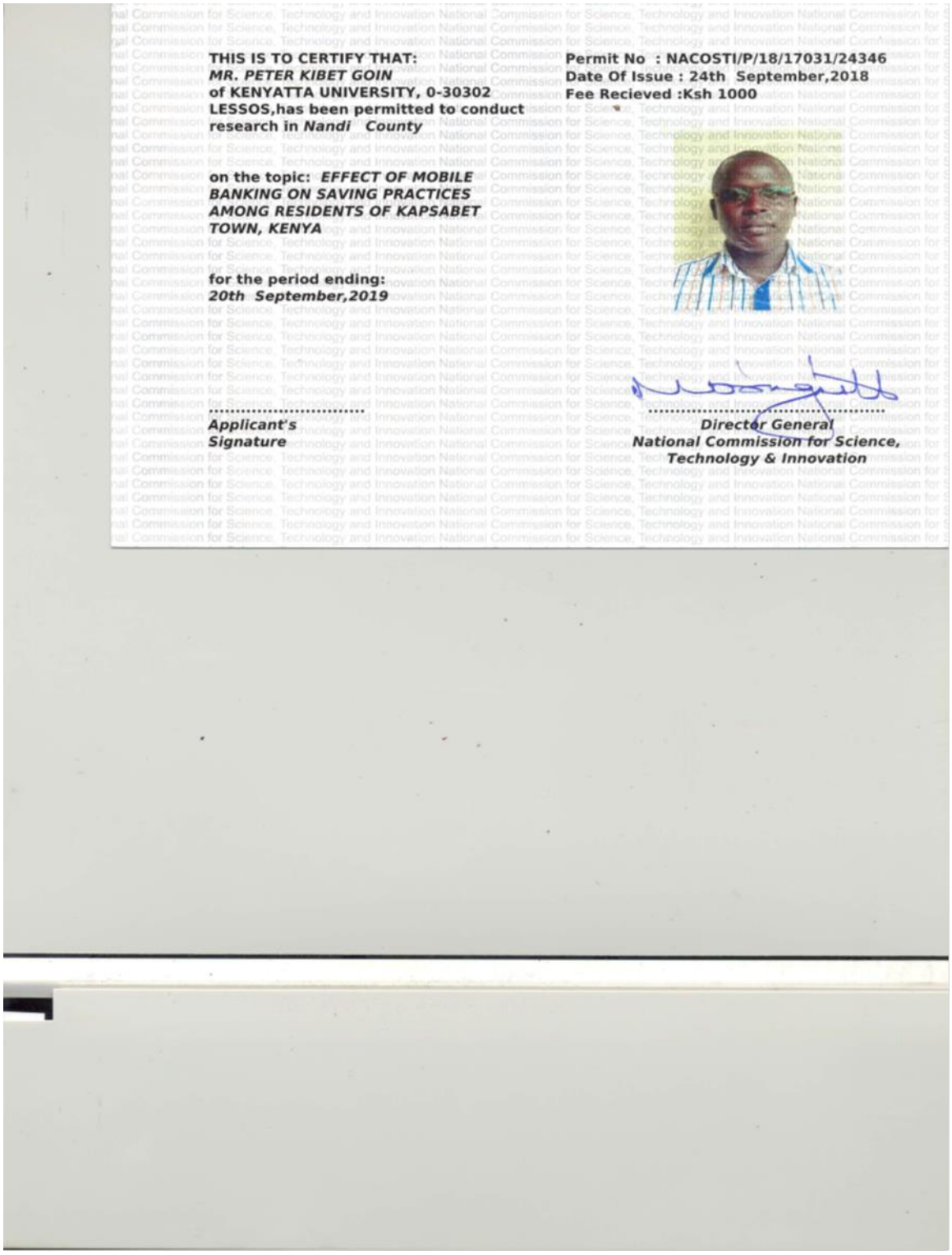
Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

*HI/lnn*

## APPENDIX VIII: RESEARCH PERMIT



THIS IS TO CERTIFY THAT:
*MR. PETER KIBET GOIN*
of KENYATTA UNIVERSITY, 0-30302
LESSOS,has been permitted to conduct
research in *Nandi County*

on the topic: *EFFECT OF MOBILE BANKING ON SAVING PRACTICES AMONG RESIDENTS OF KAPSABET TOWN, KENYA*

for the period ending:
*20th September,2019*

Permit No : NACOSTI/P/18/17031/24346
Date Of Issue : 24th September,2018
Fee Recieved :Ksh 1000

.....
*Applicant's Signature*

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

## THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

**The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.**

### CONDITIONS

1. **The License is valid for the proposed research, location and specified period.**
2. **The License and any rights thereunder are non-transferable.**
3. **The Licensee shall inform the County Governor before commencement of the research.**
4. **Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.**
5. **The License does not give authority to transfer research materials.**
6. **NACOSTI may monitor and evaluate the licensed research project.**
7. **The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.**
8. **NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.**

**National Commission for Science, Technology and innovation**
**P.O. Box 30623 - 00100, Nairobi, Kenya**
**TEL: 020 400 7000, 0713 788787, 0735 404245**
**Email: dg@nacosti.go.ke, registry@nacosti.go.ke**
**Website: www.nacosti.go.ke**

**REPUBLIC OF KENYA**

**National Commission for Science, Technology and Innovation**

### RESEARCH LICENSE

**Serial No.A 20756**

**CONDITIONS: see back page**